

AGREEMENT

This Agreement ("Agreement") is made this ____ day of January, 2008 by and between the COMMONWEALTH OF MASSACHUSETTS, acting through the Attorney General for the Commonwealth of Massachusetts (the "Commonwealth of Massachusetts"), the MASSACHUSETTS HIGHWAY DEPARTMENT ("MHD"), and the MASSACHUSETTS TURNPIKE AUTHORITY ("MTA") (the Commonwealth of Massachusetts, the MHD and the MTA are referred to collectively herein as the "Government"); and Bechtel Infrastructure Corp. ("Bechtel"); PB Americas, Inc. f/k/a Parsons Brinckerhoff Quade and Douglas, Inc. ("Parsons Brinckerhoff"); the Joint Venture of Bechtel/Parsons Brinckerhoff ("B/PB" or the "Joint Venture"); and certain Section Design Consultants (the "SDCs") involved in the Central Artery/Tunnel Project (the "CA/T Project").¹ Collectively, the Government, Bechtel, Parsons Brinckerhoff, B/PB and the SDCs shall be referred to herein as the "Parties."

Whereas certain SDCs entered into various contracts with MHD (the "SDC Agreements") in connection with the provision of services on certain sections of the CA/T Project, which are identified in Exhibit A;

Whereas, B/PB entered into a contract divided into "work programs" with MHD and/or its predecessor (Massachusetts Department of Public Works) and/or MTA (collectively, "B/PB Work Programs"), in connection with the CA/T Project, all of which are identified in Exhibit B;

¹ Not all Section Design Consultants involved in the CA/T Project are parties to this Agreement. The term "SDC" as used in this Agreement refers to the certain Section Design Consultants who have executed this Agreement. A complete list of the Section Design Consultants who are parties to this Agreement, and their contracts for the CA/T Project, is set forth in Exhibit A.

Whereas, prior to February 1, 2005, the MTA and/or MHD was responsible for implementing a program to evaluate whether certain increased design and construction costs were the result of acts, errors and omissions by the SDCs and/or B/PB, *inter alia* (the "Cost Recovery Program");

Whereas, under the Cost Recovery Program, MTA and/or MHD, with the assistance of engineering experts, identified certain issues in which increased design and construction costs allegedly were the result of acts, errors and omissions by the SDCs, Bechtel, Parsons Brinckerhoff and/or B/PB, *inter alia* (collectively the "MTA Cost Recovery Claims");

Whereas, pursuant to an Agreement between the MTA and the Attorney General, effective February 1, 2005, the Attorney General, by and on behalf of the Government, assumed responsibility for the Cost Recovery Program; and with the assistance of engineering experts, identified certain issues in which increased design and construction costs were allegedly the result of acts, errors and omissions by the SDCs, Bechtel, Parsons Brinckerhoff and/or B/PB, *inter alia*, which issues, along with the MTA Cost Recovery Claims, are listed on Exhibit C ("Government Cost Recovery Lists");

Whereas, the Attorney General issued a demand letter dated February 7, 2006, attached as Exhibit D ("Attorney General Demand");

Whereas, the Government filed certain lawsuits in Massachusetts Superior Court against, Bechtel, Parsons Brinckerhoff, B/PB and/or certain SDCs, which are listed on Exhibit E ("Government Lawsuits");

Whereas, the Government and others raised other issues, and potential claims concerning the CA/T Project, which are referenced in the list attached as Exhibit F ("Supplemental List");

Whereas, Bechtel, Parsons Brinckerhoff, B/PB and the SDCs denied, disputed and contested, legal liability and/or responsibility for the issues raised in the Government Cost Recovery Lists, Attorney General Demand, Government Lawsuits, and Supplemental List, attached as Exhibits C, D, E and/or F;

Whereas, on or about May 6, 2004, the American Council of Engineering Companies of Massachusetts, Inc. ("ACEC"), on behalf of B/PB and the SDCs, commenced a civil action against the Commonwealth, MTA and MHD entitled, American Council of Engineering Companies of Massachusetts, Inc. v. Massachusetts Turnpike Authority, Massachusetts Highway Department and Commonwealth of Massachusetts, C.A. No. SUCV2004-01941, ("the OCIP Litigation"), in which ACEC maintained that the Government had the obligation to replace, restore or otherwise fund the first excess \$10 million layer of insurance provided by Reliance Insurance Company ("Reliance") as part of the CA/T Project Owner Controlled Insurance Program ("OCIP") providing professional liability insurance coverage for professional liability claims asserted by MTA and MHD on behalf of the Government against B/PB and the SDCs;

Whereas, the Government has denied that they had any obligations regarding the replacement, restoration or funding of the Reliance \$10 million layer of the OCIP, as alleged by ACEC in the OCIP Litigation;

Whereas, Bechtel, Parsons Brinckerhoff and B/PB have entered into a separate written agreement with the Government regarding settlement of certain matters related to the CA/T Project (the "Master Agreement");

NOW, THEREFORE, in consideration of the mutual covenants, agreements and promises set forth in this Agreement, and other good and valuable consideration:

1. Without the admission of any liability or fault, the SDCs, Bechtel, Parsons Brinckerhoff, B/PB and their respective insurers shall deliver on or before January 28, 2008 to the Commonwealth of Massachusetts for deposit into the Central Artery/Tunnel Project Repair and Maintenance Trust Fund established by Mass. Gen. Laws ch. 10, § 63A, as enacted by 2007 Mass. Acts ch. 228, § 5, to be used for non-routine, non-ordinary repairs and maintenance of the Central Artery and the Ted Williams Tunnel, the total amount of \$85 million ("Settlement Amount"), plus any remaining accrued interest after accrued interest is used to satisfy any depletion of self-insured retention amounts.²

2. In the event that the SDCs, Bechtel, Parsons Brinckerhoff and B/PB fail to pay any or all of the Settlement Amount within thirty days of the due date, or otherwise materially breach this Agreement, any dismissals of the Government Lawsuits as provided in this Agreement as to the SDCs, Bechtel, Parsons Brinckerhoff and B/PB shall, at the Commonwealth of Massachusetts' option, be null and void; the Settlement Amount referenced above (minus any payment made to date) shall become immediately due and payable, and shall bear interest at the rate of 12% compounded annually as of the date of default until payment of Settlement Amount is made in full; and the Commonwealth of Massachusetts may, at its option, (a) rescind releases (without tendering to the SDCs, Bechtel, Parsons Brinckerhoff and B/PB any portion of the Settlement Agreement already paid) and/or (b) file a Stipulated Judgment against the SDCs, Bechtel, Parsons Brinckerhoff and B/PB, in the amount of \$85 million less the amount of payments made by the SDCs, Bechtel, Parsons Brinckerhoff and B/PB under this Agreement, in Court. The SDCs, Bechtel, Parsons Brinckerhoff and B/PB agree not to contest any collection action undertaken by the Commonwealth of Massachusetts pursuant to this paragraph, either

² Bechtel, Parsons Brinckerhoff, and B/PB's portion of the \$85 million Settlement Amount is \$33,972,000.

administratively or in any court. The SDCs, Bechtel, Parsons Brinckerhoff and B/PB agree to pay the Commonwealth of Massachusetts all reasonable costs of collection and enforcement of this Agreement, including attorneys fees and expenses. For purposes of enforcement of this provision, the breaching party expressly agrees to waive and not to plead, argue, or otherwise raise any defense under the theories of statute of limitations, statute of repose, contractual limitations, contractual repose, laches, estoppel or similar theories, to any civil, criminal or administrative claims which are filed by the Commonwealth of Massachusetts within 180 calendar days of written notification to the breaching party that this Agreement has been made a nullity provided that the Commonwealth of Massachusetts provides such written notification within 120 days of the failure to pay or of other material breach. In the event that the SDCs, Bechtel, Parsons Brinckerhoff or B/PB is sold (substantially all of their assets or stock) at any time before all payments pursuant to this Agreement have been made, the SDCs, Bechtel, Parsons Brinckerhoff and B/PB agree that the remaining amount due on the Settlement Amount shall be paid on or before the date of the closing of the sale.

3. A. Except as reserved in paragraph 3(B) of this Agreement, the Government hereby releases and discharges the SDCs and each of their predecessors and successors in interest, and their officers, directors, employees, parent corporations, subsidiaries, subconsultants and insurers from any and all civil claims, liabilities, costs, expenses, damages, demands, actions, causes of action and suits known to the Government as of the execution of this Agreement for: (a) those items listed or claims made on the Government Cost Recovery Lists, Attorney General Demand, and Government Lawsuits, attached hereto as Exhibits C, D, and E; (b) the failure to provide adequate services resulting in tunnel leaks; and (c) the failure to disclose financial information as alleged in

the civil lawsuit of Commonwealth of Massachusetts, et al. v. Bechtel Corporation, et al., Civil Action No. 04-1151 (Massachusetts Superior Court, Suffolk County).

B. Notwithstanding any term of this Agreement, the Government specifically reserves and does not release the SDCs or their predecessors or successors in interest, or their officers, directors, employees, parent corporations, subsidiaries, subconsultants or insurers, with respect to any of the following:

- (1) Any liability, including, but not limited to, criminal and administrative liability, arising out of or relating to the July 10, 2006 incident in which concrete ceiling panels and associated components over the eastbound lanes of the I-90 Connector Tunnel fell onto the roadway and crushed a traveling vehicle, resulting in the death of the passenger and injury to the driver;
- (2) Any claims arising under the state tax laws;
- (3) Any liability, including, but not limited to, criminal and administrative liability, to the Government, except as specifically released in paragraph 3(A) of this Agreement;
- (4) Any liability based upon such obligations as are created by this Agreement;
- (5) Any liability to third parties for personal injury, death, property damage or other consequential damages; and
- (6) Any claims against Powers Fasteners, Inc., its predecessors, affiliates, successors, and assigns.

The SDCs reserve and maintain all rights to dispute any such claims and defenses by the Government or others under sub-sections (1) through (6) above, and do not waive any claims or defenses related to sub-sections (1) through (6).

4. A. Except as reserved in paragraph 4(B) in this Agreement and except as reserved in paragraphs 16 and 17 of the Master Agreement, the Government hereby releases and discharges Bechtel, Parsons Brinckerhoff, B/PB and each of their predecessors and successors in interest, and their officers, directors, employees, parent corporations, subsidiaries, subconsultants and insurers from any and all civil claims, liabilities, costs, expenses, damages, demands, actions, causes of action and suits known to the Government as of the execution of this Agreement for: (a) those items listed or claims made on the Government Cost Recovery Lists, Attorney General Demand, and Government Lawsuits, attached hereto as Exhibits C, D, and E; (b) the failure to provide adequate services resulting in tunnel leaks in the I-93 Soldier Pile Tremie Concrete Slurry Wall panels, to the extent stated in paragraph F of the Preamble of the Master Agreement; and (c) the failure to disclose financial information as alleged in the civil lawsuit of Commonwealth of Massachusetts, et al. v. Bechtel Corporation, et al., Civil Action No. 04-1151 (Massachusetts Superior Court, Suffolk County).

B. Unless otherwise expressly stated in the Master Agreement, and notwithstanding any term of this Agreement, the Government specifically reserves and does not release Bechtel, Parsons Brinckerhoff, B/PB or their predecessors or successors in interest, or their officers, directors, employees, parent corporations, subsidiaries, subconsultants or insurers with respect to any of the following:

- (1) Any claims arising under the state tax laws;

- (2) Any liability, including, but not limited to, criminal and administrative liability, to the Government, except as specifically released in paragraph 4(A) of this Agreement;
- (3) Any liability based upon such obligations as are created by this Agreement;
- (4) Any liability to third parties for personal injury, death, property damage or other consequential damages; and
- (5) Any claims against Powers Fasteners, Inc., its predecessors, affiliates, successors, and assigns.

5. The SDCs and their predecessors, subsidiaries, affiliates, successors in interest, assigns, parent corporations and insurers fully and finally release the Government, their agencies, departments, offices, employees, servants, attorneys, officers and agents from any and all claims (including attorneys' fees, costs and expenses of every kind however denominated), actions, causes of action, suits, debts, damages (also including consequential damages), judgments, liabilities, demands and controversies whatsoever, whether matured or unmatured, whether at law or in equity, which they have asserted or could have asserted based upon services provided by the SDCs on the CA/T Project, except for (a) claims or defenses arising out of potential liabilities reserved in paragraph 3.B. of this Agreement, (b) claims brought by third parties for personal injury or death or for property damage or other consequential damages, (c) any liability based upon such obligations as are created by this Agreement, and (d) claims for unpaid compensation due the SDCs by the Government for services provided by the SDCs on the CA/T Project. The Government reserves and maintains all rights to dispute any such claims and defenses by the SDCs under (a) through (d), and does not waive any claims, cross-claims,

counterclaims, defenses or arguments relating to such claims and defenses by the SDCs under (a) through (d).

6. The Parties agree to instruct their counsel to execute and file stipulations of dismissal, with prejudice and without legal fees and costs, for the Government Lawsuits identified in Exhibit "E", as well as the OCIP Litigation, within seven business days of receipt of all payments due under this Agreement.

7. The Government relinquishes any rights or claims to payment from Reliance and the Pennsylvania Liquidation Bureau, or anyone else on behalf of Reliance, and agrees that any payment or other recovery that may be forthcoming from Reliance, the Pennsylvania Liquidation Bureau on behalf of Reliance, any of Reliance's reinsurers or other participating insurers, or otherwise on behalf of Reliance, in partial or complete satisfaction of Reliance's \$10 million coverage obligation, shall be assigned, and inure to the benefit of, and be paid to B/PB and/or the SDCs as insureds under the Reliance policy; and the Government shall execute any appropriate assignment, release or other documentation to effect the transfer of or making of any such payment to B/PB and/or the SDCs up to the maximum amount of Reliance's coverage obligation of \$10 million.

8. Except as reserved in the Master Agreement and/or this Agreement, the Commonwealth of Massachusetts will not seek against the SDCs, Bechtel, Parsons Brinckerhoff or B/PB additional payment for losses incurred in connection with the claims subject to release under paragraphs 3.A. and 4.A. of this Agreement under any restitution statute.

9. The SDCs, Bechtel, Parsons Brinckerhoff and B/PB agree to mutually release and discharge any and all liabilities and claims for contribution, indemnification, subrogation, or otherwise as between themselves, their affiliates, successors, assigns, and

insurers arising out of, relating to, or based upon any issues, events, circumstances or claims released pursuant to Paragraph 3.A. and 4.A. of this Agreement.

10. The SDCs represent that, to the best of their present knowledge, information and belief, they are not aware of any design, materials or construction defects that may affect public safety, health or welfare. This representation is limited to such defects that fall within the scope of services contractually required or provided by each SDC, and the representation is limited to actual knowledge of senior principals of each such SDC.

11. The Government represents to the best of its present knowledge, information and belief, that, other than with respect to the July 10, 2006 ceiling collapse, it is not aware of any basis for the Government to assert, and does not presently intend to bring against Bechtel, Parsons Brinckerhoff, B/PB or the SDCs, any other claims for cost recovery items arising out of the Cost Recovery Program or the items listed or claims made in the reports and other analyses contained in Exhibit F that do or may form the basis of a cost recovery demand against Bechtel, Parsons Brinckerhoff, B/PB or the SDCs.

12. In the event that the SDCs, Bechtel, Parsons Brinckerhoff or B/PB commence, or another party commences, within the 91 days of complete payment by each of the SDCs, Bechtel, Parsons Brinckerhoff or B/PB, any case, proceeding, or other action under any law relating to bankruptcy, insolvency, reorganization, or relief of debtors, (a) seeking to have any order for relief of SDCs', Bechtel's, Parsons Brinckerhoff's or B/PB's debts, or seeking to adjudicate the SDCs, Bechtel, Parsons Brinckerhoff or B/PB as bankrupt or insolvent, or (b) seeking appointment of a receiver, trustee, custodian or other similar officials for the SDCs, Bechtel, Parsons Brinckerhoff or B/PB or for all or any substantial part of their assets, the SDCs, Bechtel, Parsons Brinckerhoff and B/PB agree that:

a. The SDCs', Bechtel's, Parsons Brinckerhoff's and B/PB's obligations under this Agreement may not be avoided pursuant to 11 U.S.C. § 547 or 548, and the SDCs, Bechtel, Parsons Brinckerhoff and B/PB will not argue or otherwise take the position in any such case, proceeding or action that: (i) the SDCs', Bechtel's, Parsons Brinckerhoff's and B/PB's obligations under this Agreement may be avoided under 11 U.S.C. § 547 or 548; (ii) the SDCs, Bechtel, Parsons Brinckerhoff or B/PB were insolvent at the time this Agreement was entered into, or became insolvent as a result of the payments made to the Commonwealth of Massachusetts hereunder; or (iii) the mutual promises, covenants and obligations set forth in this Agreement do not constitute a contemporaneous exchange for new value given to the SDCs, Bechtel, Parsons Brinckerhoff or B/PB;

b. In the event that the SDCs', Bechtel's, Parsons Brinckerhoff's or B/PB's or any other entities' obligations hereunder are avoided for any reason, including, but not limited to, the exercise of a trustee's avoidance powers under the Bankruptcy Code, the Commonwealth of Massachusetts, at its sole discretion, may rescind the releases in this Agreement, and bring any civil and/or administrative claim, action or proceeding against the SDCs, Bechtel, Parsons Brinckerhoff or B/PB for the claims that would otherwise be covered by the releases provided in this Agreement. If the Commonwealth of Massachusetts chooses to do so, the SDCs, Bechtel, Parsons Brinckerhoff and B/PB agree that, for purposes only of any case, action, or proceeding referenced in the first clause of this paragraph, (i) any such claims, actions, or proceedings brought by the Commonwealth of Massachusetts are not subject to an "automatic stay" pursuant to 11 U.S.C. § 362(a) as a result of the action, case or proceeding described in the first clause of this paragraph, and that the SDCs, Bechtel, Parsons Brinckerhoff and B/PB will not argue or otherwise contend that the Commonwealth of Massachusetts' claims, actions or proceedings are subject to an

automatic stay; (ii) that the SDCs, Bechtel, Parsons Brinckerhoff and B/PB will not plead, argue or otherwise raise any defenses under the theories of statute of limitations, statute of repose, contractual limitation, contractual repose, laches, estoppel, or similar theories, to any such civil or administrative claims, actions or proceedings which are brought by the Commonwealth of Massachusetts within 30 calendar days of written notification to the SDCs, Bechtel, Parsons Brinckerhoff or B/PB that the release herein have been rescinded pursuant to this paragraph; and (iii) the Commonwealth of Massachusetts has valid claims against the SDCs, Bechtel, Parsons Brinckerhoff and B/PB in the aggregate amount of \$85 million, and they may pursue their claims, *inter alia*, in the case, action, or proceeding referenced in the first clause of this paragraph, as well as in any other case, action, or proceeding; and

c. The SDCs, Bechtel, Parsons Brinckerhoff and B/PB acknowledge that their agreements in this paragraph are provided in exchange for valuable consideration provided in this Agreement.

13. Bechtel Corp. (and any successors) has agreed to guarantee the payment of Bechtel Infrastructure Corp.'s financial obligations arising out of this Agreement. In this regard, Bechtel Corp. has provided the Government with a letter containing representations concerning the financial viability of Bechtel Corp. upon which the Government has relied in entering into this Agreement.

14. This Agreement inures solely to the benefit of the SDCs, Bechtel, Parsons Brinckerhoff and B/PB and each of their predecessors and successors in interest, and their officers, directors, employees, parent corporations, subsidiaries, subconsultants and insurers, and to the benefit of the Government.

15. The respective Parties to this Agreement acknowledge and represent that they have had adequate opportunity to consult with technical advisors, and competent legal counsel in connection with the issues covered within, and in negotiating and deciding to enter into, this Agreement. Each Party will bear its own legal and other costs incurred in connection with this matter, including the preparation and performance of this Agreement.

16. By executing this Agreement, the respective Parties represent and warrant that they possess the legal authority to do so and have consulted with all required parties and stakeholders. The SDCs, Bechtel, Parsons Brinckerhoff and B/PB also represent and warrant that they have consulted with relevant insurers. No Party purporting to release any claims hereunder has transferred or assigned its right to assert such claims to any other person or entity.

17. This Agreement shall be governed by and construed in accordance with the applicable laws of the Commonwealth of Massachusetts.

18. This Agreement will, at the Commonwealth of Massachusetts' option, be null and void if the Commonwealth of Massachusetts fails to execute and receive full payment under the Master Agreement.


19. This Agreement, including the exhibits, constitutes the complete agreement between the SDCs and the Government. This Agreement and the Master Agreement, the exhibits to both agreements, and the letter referenced in paragraph 13, constitute the complete agreement between Bechtel, Parsons Brinckerhoff, B/PB and the Government; to the extent there is any conflict between this Agreement and the Master Agreement, the text of the Master Agreement shall control.

20. This Agreement shall be binding upon the Parties to it, their affiliated entities, and their successors and assigns.

21. All Parties consent to the public disclosure of this Agreement.
22. This Agreement may not be amended except by written consent of the Parties.
23. This Agreement may be executed in counterparts, each of which constitutes an original and all of which constitute one and the same agreement.
24. This Agreement is effective on the date of the signature of the last signatory to the Agreement. Facsimiles of signatures shall constitute acceptable binding signatures for purposes of this Agreement.
25. The Parties agree that neither the Government, the SDCs, Bechtel, Parsons Brinckerhoff, nor B/PB shall be deemed the drafter of this Agreement and thus no inferences concerning the terms of this Agreement shall be drawn against either the Government, the SDCs, Bechtel, Parsons Brinckerhoff or B/PB on that ground.
26. The SDCs, Bechtel, Parsons Brinckerhoff and B/PB represent that this Agreement is fully and voluntarily entered into without any degree of duress or compulsion whatsoever.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed
by their authorized representatives:

The Commonwealth of Massachusetts

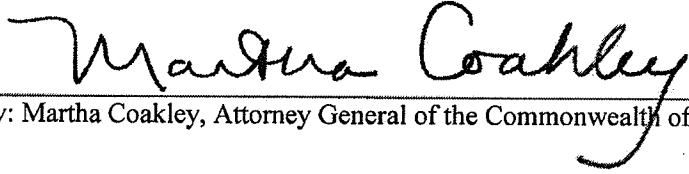

By: Martha Coakley, Attorney General of the Commonwealth of Massachusetts

Massachusetts Highway Department

A handwritten signature in black ink, appearing to be 'B. Q. L.', written above a horizontal line.


By: (An Authorized Representative)

Massachusetts Turnpike Authority

A handwritten signature in black ink that reads "Martha Coakley". The signature is written in a cursive style with a large, looping 'M' and a long, sweeping tail on the 'y'.

By: Martha Coakley, Attorney General of the Commonwealth of Massachusetts

HDR ENGINEERING, INC.
(D01A Section Design Consultant)

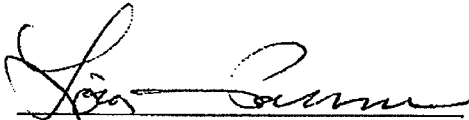
A handwritten signature in dark ink, appearing to read "Lou Pachman", written over a horizontal line.

By (An Authorized Representative)

LOUIS J. PACHMAN

HS: SR. VICE PRESIDENT & GENERAL COUNSEL

HDR ENGINEERING, INC.
(D04A Section Design Consultant)

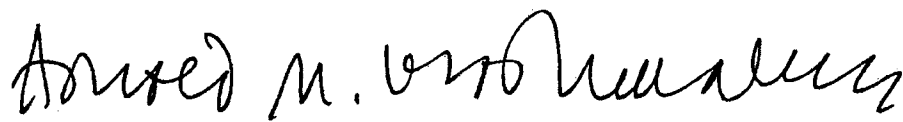
A handwritten signature in black ink, appearing to read "Louis J. Pachtman", written over a horizontal line.

By: (An Authorized Representative)

LOUIS J. PACHMAN

ITS: SR VICE PRESIDENT & GENERAL COUNSEL

DOMENECH HICKS & KROCKMALNIC, INC.
(D05B Section Design Consultant)

A handwritten signature in black ink, appearing to read "Arnold M. Krockmalnic". The signature is written in a cursive, flowing style. Above the signature, there is a small, faint handwritten mark that looks like the number "1".

By: (An Authorized Representative)

The Joint Venture of GANNETT FLEMING, INC., URS CONSULTANTS, INC., and
TAMS CONSULTANTS, INC., n/k/a EARTH TECH, INC.
(D07A Section Design Consultant)

A handwritten signature in black ink, appearing to read "D. Nicholas", written over a horizontal line.

By: (An Authorized Representative)

Donald B. Nicholas
Gannett Fleming, Inc.

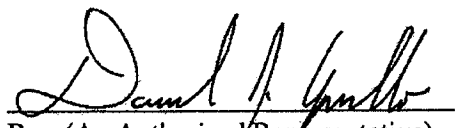
GANNETT FLEMING, INC.
(Member of D07A Section Design Consultant Joint Venture)

A handwritten signature in black ink, appearing to read "D. Nicholas", written over a horizontal line.


By: (An Authorized Representative)

Donald B. Nicholas

URS CONSULTANTS, INC.
(Member of D07A Section Design Consultant Joint Venture)


By: (An Authorized Representative)

TAMS CONSULTANTS, INC., n/k/a EARTH TECH, INC.
(Member of D07A Section Design Consultant Joint Venture)

A handwritten signature in cursive script, reading "Charles S. Alpert". The signature is written in black ink and is positioned above a horizontal line.

By: Charles S. Alpert, Vice President and Secretary


The Joint Venture of FAY SPOFFORD & THORNDIKE, INC., n/k/a FAY, SPOFFORD
& THORNDIKE, LLC, and T.Y. LIN, INTERNATIONAL
(D07D Section Design Consultant)

Pt. J. Howe 1/17/08
By: (An Authorized Representative)
PETER J. HOWE
SR. VICE PRESIDENT

FAY SPOFFORD & THORNDIKE, INC., n/k/a FAY, SPOFFORD &
THORNDIKE, LLC
(Member of D07D Section Design Consultant Joint Venture)

Pt J. Howe 1/17/08
By: (An Authorized Representative)
PETER J. HOWE
SR. VICE PRESIDENT

T.Y. LIN INTERNATIONAL
(Member of D07D Section Design Consultant Joint Venture)

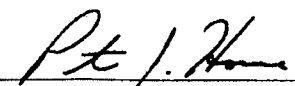

By: (An Authorized Representative)

The Joint Venture of FAY, SPOFFORD & THORNDIKE, INC., n/k/a FAY,
SPOFFORD & THORNDIKE, LLC, and RIZZO ASSOCIATES, INC., n/k/a TETRA
TECH RIZZO
(D08A Section Design Consultant)

Pt J. Howe 1/17/08
By: (An Authorized Representative)

PETER J. HOWE
SR. VICE PRESIDENT

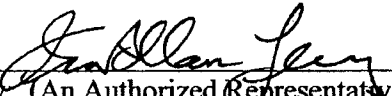
FAY, SPOFFORD & THORNDIKE, INC., n/k/a FAY, SPOFFORD &
THORNDIKE, LLC
(Member of D08A Section Design Consultant Joint Venture)

 1/17/08
By: (An Authorized Representative)
PETER J. HOWE
SR. VICE PRESIDENT

RIZZO ASSOCIATES, INC., n/k/a TETRA TECH RIZZO
(Member of D08A Section Design Consultant Joint Venture)

Brian P. Sullivan
By: (An Authorized Representative)

The Joint Venture of MAGUIRE GROUP, INC., and DMJM+HARRIS, INC., f/k/a
FREDERIC R. HARRIS, INC. and a/k/a MAGUIRE GROUP/FREDERIC R. HARRIS,
A JOINT VENTURE
(D09A Section Design Consultant)


By: (An Authorized Representative)

MAGUIRE GROUP, INC.
(Member of D09A Section Design Consultant Joint Venture)



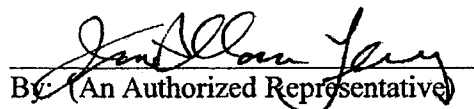
By: (An Authorized Representative)

William H. Yost, Sr.

Chief Financial Officer

1/18/08

DMJM+HARRIS, INC., f/k/a FREDERIC R. HARRIS, INC.,
(Member of D09A Section Design Consultant Joint Venture)


By: (An Authorized Representative)

GANNETT FLEMING, INC.
(D09B Section Design Consultant)

A handwritten signature in black ink, appearing to read "D. Nicholas", written over a horizontal line.

By: (An Authorized Representative)

Donald B. Nicholas

The Joint Venture of LOUIS BERGER & ASSOCIATES, INC., H.W. LOCHNER, INC.,
and STONE & WEBSTER, INC.
(D09C Section Design Consultant)



By: (An Authorized Representative)

James G. Bach, Group Vice President - U.S. Operations

LOUIS BERGER & ASSOCIATES, INC.
(Member of D09C Section Design Consultant Joint Venture)


By: (An Authorized Representative)

James G. Bach, Group Vice President - U.S. Operations

H.W. LOCHNER, INC.
(Member of D09C Section Design Consultant Joint Venture)

Jang R. Thomas
By: (An Authorized Representative)
President & CEO
H.W. Lochner, Inc.

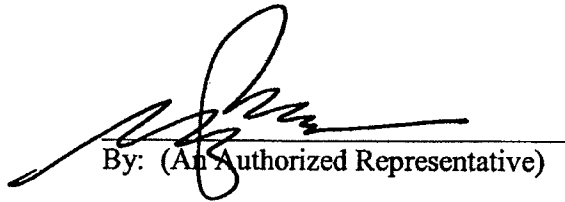
STONE & WEBSTER, INC.
(Member of D09C Section Design Consultant Joint Venture)

A handwritten signature in cursive script, reading "Gerald R. Doton". The signature is written in black ink and is positioned above a horizontal line.

By: (An Authorized Representative)

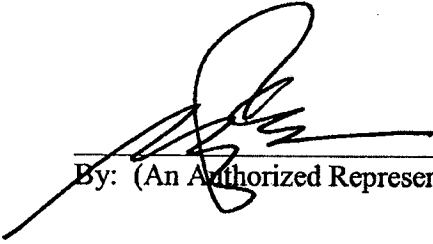
Gerald R. Doton

The Joint Venture of SEELYE, STEVENSON, VALUE & KNECHT, INC., n/k/a STV
INCORPORATED, and DELEUW, CATHER & COMPANY n/k/a PARSONS
TRANSPORTATION
GROUP, INC.
(D11A Section Design Consultant)

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By: (An Authorized Representative)

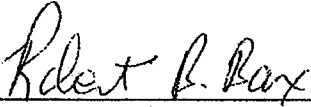
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(Member of D11A Section Design Consultant Joint Venture)



By: (An Authorized Representative)

DELEUW, CATHER & COMPANY n/k/a PARSONS TRANSPORTATION
GROUP, INC.

(Member of D11A Section Design Consultant Joint Venture)


By: (An Authorized Representative)

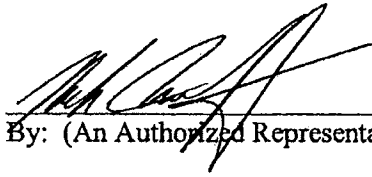
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TETRA TECH RIZZO, and VOLLMER ASSOCIATES, LLP, n/k/a STANTEC
CONSULTING SERVICES, INC.
(D12A Section Design Consultant)

Brian P. Sullivan

By: (An Authorized Representative)

AMMANN & WHITNEY

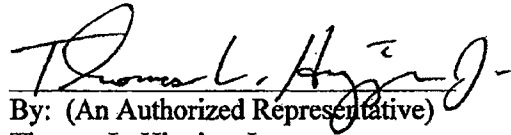
(Member of D12A Section Design Consultant Joint Venture)


By: (An Authorized Representative)

RIZZO ASSOCIATES, INC., n/k/a TETRA TECH RIZZO
(Member of D12A Section Design Consultant Joint Venture)

Brian P. Sullivan
By: (An Authorized Representative)

VOLLMER ASSOCIATES, LLP, n/k/a STANTEC CONSULTING SERVICES, INC.
(Member of D12A Section Design Consultant Joint Venture)

A handwritten signature in black ink, appearing to read "Thomas L. Higgins, Jr.", written over a horizontal line.

By: (An Authorized Representative)

Thomas L. Higgins, Jr.

Vice President

Stantec Consulting Services, Inc.

The Joint Venture of FAY, SPOFFORD & THORNDIKE, INC. n/k/a FAY, SPOFFORD
& THORNDIKE, LLC, and HOWARD, NEEDLES TAMMEN & BERGENDOFF n/k/a
HNTB CORPORATION
(D17A Section Design Consultant)


By: (An Authorized Representative)

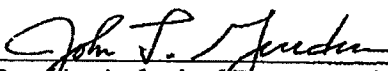
FAY, SPOFFORD & THORNDIKE, INC., n/k/a FAY, SPOFFORD &
THORNDIKE, LLC
(Member of D17A Section Design Consultant Joint Venture)


By: (An Authorized Representative)

HOWARD, NEEDLES TAMMEN & BERGENDOFF n/k/a HNTB
CORPORATION
(Member of D17A Section Design Consultant Joint Venture)


By: (An Authorized Representative)


The Joint Venture of WEIDLINGER ASSOCIATES, INC., and EDWARDS &
KELCEY, INC.
(D18A Section Design Consultant)


By: (An Authorized Representative)


WEIDLINGER ASSOCIATES, INC.
(Member of D18A Section Design Consultant Joint Venture)

Mirhaj Kirmani
By: (An Authorized Representative)

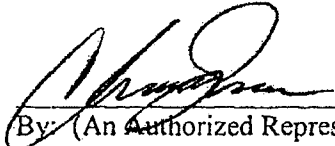
EDWARDS & KELCEY, INC.
(Member of D18A Section Design Consultant Joint Venture)


By: (An Authorized Representative)

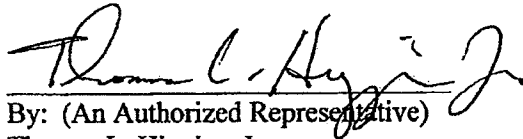
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LLP, n/k/a STANTEC CONSULTING SERVICES, INC., and AMMANN & WHITNEY
(D19B Section Design Consultant)

 , P.E. Project Manager.
By: (An Authorized Representative)

GREENMAN-PEDERSEN, INC.
(Member of D19B Section Design Consultant Joint Venture)


By: (An Authorized Representative)
CHRISTER ERICSSON
SENIOR VICE PRESIDENT

VOLLMER ASSOCIATES, LLP, n/k/a STANTEC CONSULTING SERVICES, INC.
(Member of D19B Section Design Consultant Joint Venture)

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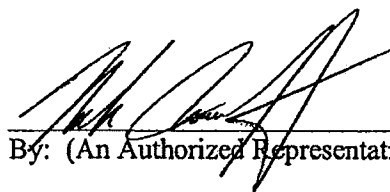
By: (An Authorized Representative)

Thomas L. Higgins, Jr.

Vice President

Stantec Consulting Services, Inc.

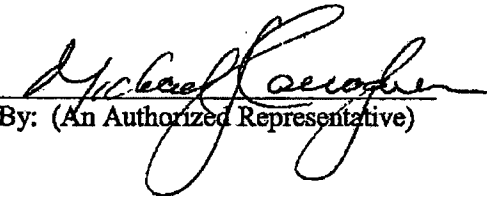
AMMANN & WHITNEY
(Member of D19B Section Design Consultant Joint Venture)


By: (An Authorized Representative)

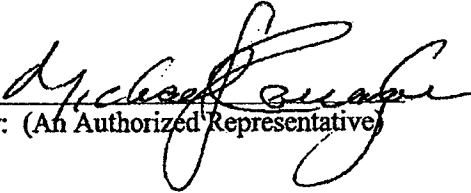
HOWARD, NEEDLES TAMMEN & BERGENDOFF n/k/a HNTB CORPORATION
(D19D Section Design Consultant)


By: (An Authorized Representative)

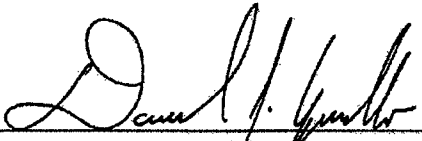
The Joint Venture of VANASSE HANGEN BRUSTLIN, INC., URS CONSULTANTS,
INC., and TAMS CONSULTANTS, INC., n/k/a EARTH TECH, INC.
(D19E Section Design Consultant)


By: (An Authorized Representative)

VANASSE HANGEN BRUSTLIN, INC.
(Member of D19E Section Design Consultant Joint Venture)


By: (An Authorized Representative)

URS CONSULTANTS, INC.
(Member of D19E Section Design Consultant Joint Venture)

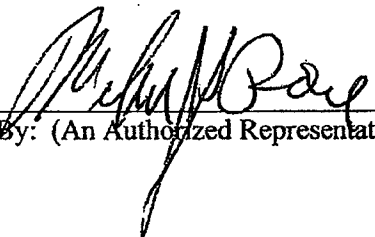

By: (An Authorized Representative)

TAMS CONSULTANTS, INC., n/k/a EARTH TECH, INC.
(Member of D19E Section Design Consultant Joint Venture)

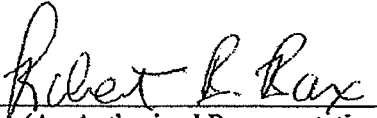
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By: Charles S. Alpert, Vice President and Secretary

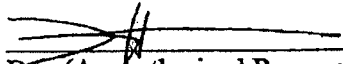
WESTON & SAMPSON
(D21A Section Design Consultant)


By: (An Authorized Representative)

DELEUW, CATHER & COMPANY n/k/a PARSONS TRANSPORTATION GROUP,
INC.
(D22A Section Design Consultant)


By: (An Authorized Representative)

CARR, LYNCH & SANDELL, INC.
(D29A Section Design Consultant)


By: (An Authorized Representative)
JEAN HERMANN

Bechtel Infrastructure Corp.


By: (An Authorized Representative)

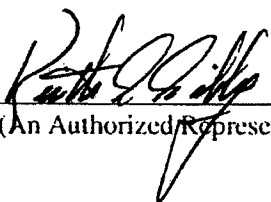
PB Americas, Inc. f/k/a Parsons Brinckerhoff Quade and Douglas, Inc.



By: George J. Peterson

President

The Joint Venture of Bechtel/Parsons Brinckerhoff


By: (An Authorized Representative)


By: (An Authorized Representative)

EXHIBIT A

SECTION DESIGN CONSULTANTS

CONTRACT ¹	SECTION DESIGN CONSULTANT
D01A	HDR Engineering, Inc.
D04A	HDR Engineering, Inc.
D05B	Domenech Hicks & Krockmalnic, Inc.
D07A	Gannett Fleming, Inc. URS Consultants, Inc. TAMS Consultants, Inc., n/k/a Earth Tech, Inc.
D07D	Fay Spofford & Thorndike, Inc., n/k/a Fay, Spofford & Thorndike, LLC T.Y. Lin, International
D08A	Fay, Spofford & Thorndike, Inc., n/k/a Fay, Spofford & Thorndike, LLC Rizzo Associates, Inc., n/k/a Tetra Tech Rizzo
D09A	MaGuire Group, Inc. DMJM+Harris, Inc., f/k/a Frederic R. Harris, Inc.,
D09B	Gannett Fleming, Inc.
D09C	Louis Berger & Associates, Inc. H.W. Lochner, Inc. Stone & Webster, Inc.
D11A	Seelye, Stevenson, Value & Knecht, Inc., n/k/a STV Incorporated, and DeLeuw, Cather & Company n/k/a Parsons Transportation Group, Inc.
D12A	Rizzo Associates, Inc., n/k/a Tetra Tech Rizzo Ammann & Whitney Vollmer Associates, LLP, n/k/a Stantec Consulting Services, Inc.
D17A	Fay, Spofford & Thorndike, Inc., n/k/a Fay, Spofford & Thorndike, LLC Howard, Needles Tammen & Bergendoff n/k/a HNTB Corporation
D18A	Weidlinger Associates, Inc. Edwards & Kelcey, Inc.
D19B	Greenman-Pedersen, Inc. Vollmer Associates, LLP, n/k/a Stantec Consulting Services, Inc. Ammann & Whitney
D19D	Howard, Needles Tammen & Bergendoff n/k/a HNTB Corporation

¹ The Contract designation herein is to include all subcontracts, sub-parts, amendments, revisions and modifications to the listed design contract.

D19E	Vanasse Hangen Brustlin, Inc. URS Consultants, Inc. TAMS Consultants, Inc., n/k/a Earth Tech, Inc.
D21A	Weston & Sampson
D22A	DeLeuw, Cather & Company n/k/a Parsons Transportation Group, Inc.
D29A	Carr, Lynch & Sandell, Inc.

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EXHIBIT B

WORK PROGRAMS

Work-Program	Effective Date	Initial Completion Date	Extension Completion Date	Contract Number
1	12/03/85	12/12/86	N/A	24630
2	08/28/86	09/02/87	N/A	87085
3	05/19/87	12/31/87	N/A	87519
4	12/09/87	06/30/90	N/A	88418
5	05/25/90	05/31/91	N/A	90203
6	10/03/90	03/31/92	01/31/99	91237
7	12/14/90	05/31/92	N/A	91334
8	06/14/91	05/31/92	09/30/92	91600
9	06/24/91	05/31/92	09/30/92	91601
10	09/25/92	09/30/93	N/A	93182
11	09/02/92	09/30/95	12/31/05	93141
12(a)	09/22/93	09/30/95	N/A	94165
12(b)	09/22/93	09/30/95	N/A	94165
13	06/26/96	07/31/96	03/31/03	96158
14	06/19/96	07/31/96	06/30/01	96159
15	02/01/01	12/31/05	N/A	30103
16	01/01/03	12/31/05	12/31/07	

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EXHIBIT C

Cost Recovery Issues

Issue	Contract	Mod#	
1	C07A1	26	Support of excavation
2	C07A1	31	Rental and materials re-handling costs caused by early land transfer from C07A1 to C07D
3	C20A2	3	Additional costs in relation to changes in the design to the supply flue balancing plates
4	C07A4	51	Revisions to various structural drawing details to reflect refinement in design
5	C09A7		Fort Point Channel
6	C05A1	044, 056	Changed specification for immersed tubes for interface with cofferdam
7	D002A		Slope paving failure; additional design and construction costs
8	C07A1	7	Addition of surface mounted conduits to replace conduits shown as being embedded in concrete (see CR# 658)
9	C05A1	42	Modification to stray current station to prevent moisture leakage into corrosion control system
10	C05B1	85	Relocation of anchor bolts
11	C05A1	54	CADD electronic files
12	C07A1	60	Revised contract limit at station (ITT interface)
13	C07D1	25	Ground wiring for the viaduct electrical system
14	C14C2	19	Callahan Ramp changed conditions
15	C14C2	3	Relocate cable television service to Marriott Hotel
16	C14C2	15	Relocate traffic signal and lighting cabinets
17	C14C2	6	Demolition and removal of reinforced decking on tunnel ramp
18	C14C2	21	Lightweight backfill at MH#17 and MS#28A/NESI relocation
19	C13A1	20	Asbestos remediation
20	C13A1	40	Increase size of manhole
21	C14C2	5	Relocation of teleport communications cable
22	C14B1	13	Utility relocation - North of Causeway/Installation of 16" gate valves
23	C14B1	10	Utility relocation - North of Causeway/Conflict between existing BECO lines and CSJC #13
24	C14B1	5	Existing foundation at Stop & Shop loading dock
25	C14B1	5	Added manholes for the 36" CS
26	C02A1	4	Field modification of track drain manholes
27	C07D1	15	Revise relocation of electric and telephone ductbanks
28	C07D1	2	Resequence Stage 1 viaduct construction
29	C05A1	44	Trimming tube No. 2 outboard horn beams
30	C05A1	53	E and F electrical pullbox extension
31	C07D1		Demolition of the Porter Street combined sewer at West Abutment
32	C14A2	31	Escalator pit foundation interferences
33	C14B1	21	DSC 115KV lines @ MH#13
34	C14B1	032SF	DSC CS MH#18
35	C07A1	64	Additional grouting @ ITT interface (see CR# 660)
36	C04A3	5, 011	Contract contingency adjustment; changed cofferdam access date (time); different site conditions during caisson installation (time)
37	C07D1	11	Revise duct tie details
38	C02A1	26	Replace slope paving on Haul Road
39	C04A2	082SF	Invert change at Stations 71 and 98
40	C04A2	69	Fire water line interference with ceiling panel hangers
41	C04A3	22	Support beam relocation at second floor exhaust stacks
42	C04A3	28	Revisions to precast panel dimensions
43	C05A1	54	5" fiberglass conduit
44	C13A1	26	Relocate BE manhole and duct bank
45	C13A1	23	Viaduct grounding system
46	C13A1	36	Viaduct bearing pads
47	C20A2	19	ITT walkway pullbox covers
48	C24A1	19	OCC Electrical/PCS manhole ductbanks
49	C04A2	61	Revisions to West Tunnel for seismic
50	C04A2	81	Revision to boat wall face and walkway cross-slope
51	C24A2	4	H-Pile
52	D014B	18	Drawing orientation (Mod #005)
53	C14B3	4	Utilities relocation
54	C20A2	10	Utility room transformer mounting (includes PCN 039)
55	C20A2	024SF	VB-7 cable tray revisions
56	C20A2	25	BIF surface mounted conduits
57	C07D1	31	Schedule and impact costs
58	C04A2	078SF	Steam plant header relief valves

Cost Recovery Issues

Issue	Contract	Mod#	
59	C04A3	051, 073	Duct mounted smoke detectors
60	C11A1	2	Rite Media sign removal transfer from C07A1 to C07D
61	C04A2	89	Drain line/existing sewer conflicts
62	C13A1	13	Temporary SBBR ramp in Widett Circle -Changes to Guardrails
63	C24A1	035SF	Increase standby generator intake louver width (RFI-137)
64	C05B1	25	Yoke plant dimension change
65	C07A5	7	Telephone service and electric fee
66	C17A2	11	Excessive pile obstructions and footing removal
67	C04A2	097SF	Utility modifications at FID Kennedy Ave.
68	C04A2	103	Site revisions for EPPS Station (see CR #612)
69	D019A		Contract maximum payment amount adjustments and closeout
70	D016A	11	Additional construction phase service
71	C04A3	26	Supplemental framing for first floor electrical openings
72	C11A1	10	Dewey Square 30" gas line realignment - Duplicate of CR #538
73	C21A2	52	Extend sand drainage layer
74	R15A6		Asbestos Abatement
75	C20A2	35	Tunnel lighting/ceiling installation
76	C14C2	35	Delay in mobilization of slurry wall
77	C22A1	36	Provide non-PVC jacketed control
78	C07D2	1	Airport access road signage revisions
79	C07D1		Insurance deductibles
80	C07D1	070SF	Emergency temporary boat section - LMC repairs
81	C15A3	027SF	Silicone Containment Pit
82	C07D2	13	Gravel fill under existing boat slab
83	C04A2	108	Sewer manhole #10 and EDIC information booth conflict
84	C04A2	108	ITT batch closure issues
85	C04A2	108	Backfill of vent building #6/ITT
86	R15A6	7	Leveling compound - asbestos abatement (Analex)
87	R15A6	2	Asbestos abatement - window caulking (Analex)
88	C09C1		Rev. of Ivas beam to bent cap connection for prying action - D012A
89	C09C1		Revised Ivas plans - D012A
90	C12A3	037SF	Northbound frontage road drainage changes
91	C12A3	031SF	Modifications to C13A1 area to accommodate SBBR bridge ext
92	C12A3	52	Beveled sole plate bearings
93	C07D2	194	Modify lighting levels to conform to design standards
94	C09A8	93	Design specified bridge closure panels and site/type of bolts for installation. Bolts failed.
95	C19B1	265	Conduit supports at C19D3 and C19B1 interface omitted from design.
96	C15A1	55	Necessary to reinstall of permanent waterline at corrected elevation to resolve conflict with proposed electrical ductbank.
97	C15A1	108	Designed configuration did not fit as-built condition; ramp RF/RG bent girder steel. Duplicate of CR#320.
98	C19B1	181FW	IPCS manhole conflict ductbank/Potential error in contract drawings resulted in rework of excavation.
99	C19B1	247	Discrepancy in documents re: pier elevations
100	C15A2	318FW	Utility conflict. Western Union and Teleport ductbanks from Valenti to Causeway.
101	C15A1	353	Design for support piles failed to account for excavated condition; additional bracing for temporary ramp caissons.
102	C15A1	389FW	Incorrect elevation of steel and cap plates for RC-14 and 15 required contractor to shim.
103	C19E1	160FW	Existing structure was fabricated for 24" pipe (19E5). Had to be reworked for a 30" in 19E1.
104	C15A1	402FW	Additional underpinning lead removal at Bent 21, 23, and 31
105	C19B1	322FW	Contract documents did not provide correct scupper downspout elevations, necessitating drainage rework. Update #6
106	C15A2	063, 150	Slurry wall/ waterline conflict at Valenti Way
107	C15A2	204	Change in roof girder splice bolts/plates.
108	C19B1	26	Contractor installed MBTA cable trough in accordance with special provisions resulting in conflict with contract drawings.
109	C19B1	37	Remove contaminated materials at warehouse
110	C19B1	043FW	Replacement of BW&S meter pit frames and covers.
111	C19B1	131	Anchor slab for barriers on Ramp T-L.
112	C19B1	132	Rework for installation of epoxy coated rebar. NB-10 & NB11 Straddle Beams

Cost Recovery Issues

Issue	Contract	Mod#	
113	C19B1	133	Install slotted perforated corrugated plastic pipe; subdrains outside of ramps N-S walls
114	C19B1	165	Interface issues, barrier revisions, additional supports, SN/NS4
115	C19B8	152	Increase weld size in tub girder diaphragms.
116	C19E1	66	Temporary shoring towers required because pedestrian bridge temporary support system design was insufficient.
117	C19E1	047FW	Emergency repairs to pedestrian bridge support system at Leverett Circle
118	R19E3	014, 023	Removal and disposal of contaminated dirt, water and granite.
119	R19E3	21	Contract did not indicate existence of existing asbestos pipe encased in concrete and oil-contaminated sewer line.
120	C19E7	080, 045	Additional structural support and revision stay-in-place form layout.
121	C19E7	087, 045	Revise to comply with DPM 142 (FCN 012) - utility room drainage and egress structure details.
122	C22A1	134SF	Fire alarm system services
123	C19B1	247	Beams between the cast-in-place and box beam spans of unequal height. Connection at Temp Ramp 6
124	C19B1	234	Additional work for balanced cantilever segments meeting accidental bridge segment release requirements.
125	C11A1	799	Contract omitted requirement for Contractor to restore 3" of concrete that it had removed in installing struts and roof girders. - Merged into CR #627
126	C15A1	306	Base slab elevation conflict.
127	C15A1	222	Overrun in unit price item quantities.
128	C09B2	5	Drawings omitted details specifying materials to be used in fabrication of jet fan electrical panel enclosures and fire rating requirements.
129	C07D2	58	Coordination between C22A2 and C07D2 designs.
130	C11A1	526	Design omitted requirement to maintain temporary MBTA drainage system during installation of Needle Pile F12.
131	C09A4	213	Revisions to IPCS, Straddle bent, Ramp LL and Frontage Road.
132	C05B1	117, 018	Deficiencies in Tod Williams Tunnel exhaust air system.
133	R08A4	52	Change in electrical conduit, utility installation, drainage work and soil removal.
134	C17AA	17	Revisions to raceway fireproof enclosures and conduit runs
135	C09A4	227	Installation and removal of muck bin and foam road for C09C1 access through the C09A4 work site. Design coordination problem.
136	C01B1	1	Structural steel coating revisions.
137	C01B1	5	Rebid miscellaneous and ornamental iron filed subbids.
138	C09A3		Rebid miscellaneous and ornamental iron filed subbids.
139	C09A7	222	Deflection of H-pile wall (multiple PCNs)
140	C19B1	286	Design and construction of alternate falsework - ST-2/CT-2
141	C19B1	288	Design and construction of alternate falsework - ST-3, CT-3, TC-15
142	C19E1	150	Additional anchorage for embedded plates at roof girders.
143	C19E4	8	Demolish existing drilled shafts.
144	C19E7	109	Traffic alignment revisions.
145	C19B1	199	Revisions to overlay thickness on temporary ramps #1, 2, 5.
146	C15A3	171	Revisions to access hatches for surge and settling tanks.
147	C19B1	323	Replanting with different riverside species for test plots
148	C19E7	128	Bolsters were installed in accordance with approved shop drawings but required rework
149	C19B1	315FW	Rework straddle bent bearing plates. NB-8
150	C19B1	330FW	Rework of temporary ramps. CT/TC Crossover Changes
151	C19B1	65	Contractor's engineer incurred costs for additional design and engineering due to possible design errors (Update #6)
152	C07D2	235	Modify height of temporary light poles which conflicted with overhead viaduct
153	C01A3	51	Revisions to FUKO Hose System
154	C08A1	7	Grout injection at TWT; Water infiltration through concrete joint openings in cross-passageways. (Tunnel leakage may have been due to defective design.)
155	C19B1	279FW	Changes to scupper design and added post tensioning block.
156	C19B1	334FW	Revisions to temporary ramp profile. Ramp LT-2 conflict with Bent 5 footing
157	C15A2	150	Common south abutment wall (PCN 350) - B/PB coordination issue. Common south abutment wall (Mod 150 is a 15A2 Mod and is PCN 350). B/BP Coordination issue with C19D1.
158	C19D1	116	Redesign of closure wall footing to avoid utility conflict (CP 118).
159	C15A2	150, 370	PCN 370: Revisions to walkway gutter to blackout to coordinate with C17AA
160	C15A2	150, 367	Routing for power and instrumentation conduits serving jet fans on Ramp SA-CN revised. (RFI I-151)

Cost Recovery Issues

Issue	Contract	Mod#	
161	C15A3	75	Revisions to plenums and access stairway pressure (DPM 176).
162	C20B1	9	Change in motor horsepower for vent building exhaust fans.
163	C19B1	340-343FW	Rework of conduit and cages in pier segments.
164	C15A1	549	Revisions to method of underpinning at Bent RH-1, 2 and 3.
165	C07D2	150	S-R-10 roadway revisions; Possible design omissions, conflicts and errors impacted contract constructability.
166	C12A3	224	Mast arm design conflicted with I-93 structure, necessitating extension of C12A3 Milestones 1 and 2 and revision of signal mast arm
167	C07D2	116	Revisions to post-tensioning cables, reinforcing steel and electrical conduits.
168	C17A2	143FW	Traffic phasing conflicts with C15A1.
169	C11A1	808	Revisions to interim fire system to avoid conflict with follow-on contractor (CP 888).
170	C07D2	267	Additional shoring and post tension revisions.
171	C07D2	276	Traffic detour modifications.
172	C12A3	199	Bridge railing revisions to conform to the ADA and Massachusetts Building Code.
173	C25A4	32	Disposal of bulk concrete debris with asbestos not included as pay item in contract.
174	C15A1	50	Settlement of multiple contractor proposals.
175	C19B1	053, 154, 289	Delete post-tensioning blocks and add spiro ducts in balanced cantilever segments.
176	C09A4	267	Excavation of harder than anticipated soil mix installed under C09A8.
177	C09A8	114	West Fourth Street reconfiguration did not accommodate C09A4 and C12A3 construction activity.
178	C09A8	115	Movement in Fort Point Channel perimeter wall during C09A8 soil mix and jet grouting, ops resulted in re-siltation of Channel.
179	C19D1	136	Bent 6 center column adjustment (CP 145).
180	C01A6	510	Additional power supply, rebar, cap material, slurry wall redesign and design revision. Settlement of outstanding issues, including CP056, CP124, CP138, CP150, CP214 and CP222.
181	C12A3	151	Temporary drainage and install overhead directional and regulatory signing - provisions omitted.
182	C17AA	194	Requirement of soldier pile protection was not included as C11A1 contract requirement
183	C09A4	45	Revisions to electrical ceiling pull boxes and additional stub-outs.
184	C08A1	60	As bid design omitted a pipe cross detail subsequently added to C08A1 contract. Elimination of MPA surface/storm water diversion structure and installation of pipe cross detail
185	C09B1	79	Possible design coordination issue in C09B1's removal of sheet piles at sta. 31 and 50 that were in original scope of C09A7.
186	C08A5	10	Revised clearance areas.
187	C09A4	283	Additional soil stabilization necessary because the excavation was not performed by C09A7 or C09B1
188	C17AA	67	Revised cable tray grounding.
189	C17AA	139	Additional pull boxes and modifications to electrical hatch layouts.
190	C22A2	28	FDS Monitor module relocation in TWT (FCN 168).
191	C08A1	18	Additional safety inspection of temporary bridge.
192	C07D2	319	Changes to the approach slab elevations and vehicle barrier elevations along Ramp U-T/A.
193	C19B1	320FW	Universal insert boxes at Ramp TC
194	C19D1	149FW	IPCS blackout detail conflict
195	C09B1	105	Leaks in excavation support system below Immersed Tube Tunnel
196	C01A3	244	Leaks at interface joint between C01A3 and C04A2 (CP 140)
197	C09A3		Wall interference Vent IV
198	C01A3	255	Inadequate pull box covers
199	C17AA	229	Revise C20B2 Ramp C lighting design within C09A4 and C11A1 contract areas
200	C19B1	320FW	Universal insert boxes at Ramp TC
201	C07D2	202	CP 448, 270, 307, 332 and 349 - Design changes and revisions; multi-issue settlement re: arrivals tunnel impacts
202	C22A2		Conflict between VMS, cameras, LUS structures and fixed sign panels
203	C09A4	261	CP 151 HOV EB - voided slab discrepancies
204	C07D2	235	Interim lighting below viaducts for detours 19 and 23
205	C09A4	335	Drilled shafts pay item
206	C12A3	202	Change in I-beam/elevation
207	C01A3	255	Pullbox covers
208	C09B2	154	Roadway dust control quantity
209	C17AA	155	Corrosion Protection (PCN 709) Merge with CR 627.02
210	C17AA	60	Revise conduit supports/electrical pull boxes

Cost Recovery Issues

Issue	Contract	Mod#	
211	C17AA	33	Fire standpipe isolation valves
212	C19E1	267	Tunnel clearance -Dup of CR 272
213	C09A4	229	Electric raceway gap interface C17AA/C09A4
214	C17A1	347	Fire protection system
215	C19B1	329	Partial erection of SB-7R temporary ramp 7
216	C17AA	7	Update #1
217	C19E1		Temporary Ramp LCN Span 13
218	C17A6	47	Tunnel lighting design - Duplicate of CR # 377
219	C22A1	180FW	FM Rebroadcast antenna
220	C22A1	28	CO monitor system
221	C22A1	60	Hardware and software design deficiencies C22A1/C22A2
222	C19B1	53	Post Tensioning brackets
223	C07D2	362	Pavement failure, C07D2 mod
223.1			Pavement Failure - BPB portion (223.a = 223.1)
223.2			Pavement Failure - SDC portion 223.b = 223.2)
224	C19E7	78	Temporary Ramp LC-N – typical bearing assembly
225	C09A8	59	Cable manhole
226	C09A4	26	Cross hole sonic logging tubes
227	C15A1	342FW	Air Cock Release Valves
228	C21A2	131FW	Replace native grass
229	C09A4	090FW	Coating for bearings
230	C17A9	199FW	Conflict between ductbank and manholes in zone 200N
231	C09C1	135FW	Traffic arm interference
232	C17A2	78	Identification of contaminant hazard
233	C19E1	16	Nashua Street alignment and grading
234	C19B1	106	Drainage line cleaning
235	C15A1	213	Conflict Ramp RJ Sign Bridge and Shurry Wall
236	C15A2	191	Conflicts Wall/Soldier Piles and Roof Slabs (RFIs 687 and 688)
237	C09A4	175	Hard wire fire alarm pull box
238	C07D2	162	Thickened slab detail for electrical elements
239	C22A1	251	Sign damage
240	C09A4	154	Increase manhole diameter
241	C17A1	191	Vertical ductbank
241.1			BECO Manhole (Paid under C17A1 Mods A191 and A231 and CP304) (241.a = 241.1)
241.2			BECO Manhole (Paid under C17A1 Mods A191 and A231 and CP304) (241.b = 241.2)
242	C19B1	177FW	Plate thickness conflict
243	C09B2	031FW	Electrical conduit conflict
244	C19D1	75	Redesign - PT/rebar congestion
245	C19D1	170	Mainspan steel forced fit-up
246	C17A1	413	Excavation sequence - Federal Reserve Bank claim
247	C15A1		D015A - Nonreimbursable Design Billings for RFI review. All construction contracts.
248	C15A3	205	Installation of Exhaust Plenum Airlocks
249	C15A3	309, 310, 311, 312, 313, 324	Redesign conduit, ductwork, plumbing, equipment, HVAC, fire protection
250	C15A3	250	Acceleration of all milestones
251	C15A3	179, 180	Conduit and IPCS conduit installation - Electrical Update
252	C19D1	19	Additional light mounting brackets
253	C19D1	23	South tower strut resequencing and tendon conflicts
254	C19D1	037FW	South abutment corbel revisions
255	C19D1	043FW	Floor beam top flange/edge girder conflict
256	C19D1	44	South backspan/South tower integrated shop drawings
257	C19D1	048FW	Steel formwork tubes
258	C19D1	129	Precast panel leveling bolts (PCN 055)
259	C19D1	129	Mainspan erection analysis/additional cable strands (PCN 083)
260	C19D1	75	Bent 5 diaphragm dimensions and transverse tendons (PCN 96)
261	C19D1	75	Bent 6 diaphragm interference (PCN 99)
262	C19D1	129	Additional cable strands/heavy mainspan (CP 114) (PCN 114)
263	C19D1	75	North tower ramp geometry plan (PCN 160) -SACN ramp strut elevation revisions
264	C19D1	75	Conflicts structural elements/constructability (PCN 100)

Cost Recovery Issues

Issue	Contract	Mod#	
265	C19D1	75	South backspan rebar changes (PCN 156)
266	C19D1	75	Global Settlement
267	C19D1	168FW	Coating damage from welding studs (CP 147)
268	C19D1	184	Firestand pipe coating (CP 189) (PCN 184)
269	C19D1		Tendon tubes with voids
270	C20B2	23	Vent Building 8 Redesign. Equipment and raceway layout changes
271	C19B1	379	CT-1 Erection Revision
272	C19E1	267	Reroute SPTC Tunnel Conduit for Fire (FCN 128) -Dupl. CR 212
273	C01B1	107	Conflict CMU opening/Louver frames
274	C09B2	078FW	Replace Propane Powered Equipment with Diesel
275	C17AA	021FW	Revise door panel height
276	C15A2	320FW	12 4" TE ductbank conflict w/TEMH #1075 at Causeway Street
277	C19B1	231FW	Relocation of 3" conduit
278	C17A2	195FW	Utility Room No. 4 Conduit Run re-work
279	C01B1	029FW	Added monorail support
280	C15A2	397FW	Drug Testing
281	C07C1	041FW	Furnish alternate rooftop a/c unit
282	C15A2	365FW	Cross Passage Details
283	C19B1	297FW	ILCC microsilica remediation
284	C07C1	012FW	Ramp E-T Toll building plumbing
285	C15A2	404FW	Conflicts with GWES manhole T.
286	C01B1	032FW	Baseplate revisions/anchor bolt corrections
287	C15A1	495FW	Damage Traffic Signal
288	C09A3	083FW	ERS/ESS/Modified coping at windows
289	C17A3	078FW	Emergency egress gate conduit replacement - Contractor Backcharge
290	C19B1	361FW	Bent 33 conduit riser/rebar conflicts
291	C01B1	031FW	Fire telephone system
292	C09A3	048FW	CMU Wall interference/steel roof beam conflict
293	C08A5	015FW	Pile relocations due to conflicts
294	C01B1	053FW	Trench and drain conflict at loading dock
295	C09A3	098FW	Stair height clearance conflict
296	C09A4	282	Relocate freeze plant and extend maintenance
297	C11A1	833	Revised connections of t'way framing to SPTC pin piles (CP 839)
298	C20B2	65	Interim Electric Substation (C15A2, C17A2, C20B2)
299	C20B2	71	15KV vacuum circuit breakers
300	C20B2	81	Fuel injection system - Duplicate of CR #332
301	C19B1	153	Additional bracing at CT-26 and TC-27
302	C17A3	86	Revisions to contract milestones
303	C20B2	26	Revisions to duct lighting fixture in exhaust ducts
304	C17AA	194	Tunnel leak repair work - closed because duplicate of CR# 182
305	C17AA	215	Fuko hose extension - Merged into CR #627.01
306	C01B1	107	Ventilation Building No. 5
307	C20B2	97	Revised Access Restraints and Milestone Dates
308	C12A3	265FW	Low barrier
309	C20B1	60	Revised Access Restraints and Milestone Dates
310	C12A3		Remedial work
311	C09B1		Ramp T-S Milestones
312	C17AA	229	Raceway gap - Duplicate of CR #199
313	C11A1		Denso - C17AA/C11A1 - Merged into CR #627.02
314	C20B2	66	Light fixture supports
315	C19B1	054FW	Cable trough bypass
316	C15A1	292FW	Revisions to Lower Framing Plan and TFI at RF
317	C15A1	43	CATV temporary conduit changes
318	C15A1	060, 117FW	Egress Stair #1
319	C15A1		Shop Drawing Rework / Excess Engineering
320	C15A1	108, 352FW, 503FW	Ramp RF/FG Sequence bent girder steel. Duplicate of CR#97.
321	C15A2	108	Changes to Load Bearing Element (LBE) #17 (FCN S-139-3-1) (PCN 045)
322	C15A2	198, 150	Bent Z Underpinning (RFI 1037) (PCN 198)
323	C15A2	150	Underpinning Conflict due to No-splice Zone (PCN 297)

Cost Recovery Issues

Issue	Contract	Mod#	
324	C15A2	150	Additional Support for Hanging 66" CS and 30" LS lines (PCN 333)
325	C15A3	73	GS-01 Headroom Clearance
326	C15A3	081SF	Garage Standpipe System
327	C15A3	116	Utility Relocation
328	C15A3	124	Traffic / Work Deck Coordination
329	C15A3	125FW	Garage Elevator Glazed Opening Infill
330	C15A3	143	Kodiak-type Tower Crane (PCN 152)
331	C20B1	88	Buy America Provision
332	C20B2	81	Fuel Injection System - Duplicate of CR-300
333	C19B1	384	Erection Tower Conflicts
334	C17AA	456	Stainless Steel Screens
335	C19B1	591	Safety Grates
336	C15A3	287	Lift-out Roof Hatch (RFI 1207)
337	C19B1	532	Temporary Support at Straddle Bent TC-17L
338	C01A3	244	Joint Repair at C04A2 interface (CP 140)
339	C19B1	586	Future PT Conflicts
340	C15A3	323	Material Handling Services to Follow-on Contractor
341	C01A6	621	Utility Bridge Support
342	C17A6	47	Interim Lighting Revisions - Duplicate of CR #377
343	C15A2	055, 150	Underpinning (C15A2) - detailing/fabrication changes
344	C19B1	596	Revisions to expansion joint at Pier TC-3
345	C09A4	438	Acceleration of viaduct Ramps K\KK
346	C15A3	173	Addition of final surface restoration work along Hanover & Congress Streets
347	C09C4	42	Installation of temporary bearings and procurement of shorter, permanent bearings
348	C09A4	132	Installation of civil work and additional freeze pipes for the I-90 Eastbound
349	C09A4	31	Installation of civil work and additional freeze pipes for the I-90 Westbound
350	C09A4	45	Electrical work including additional rebar, additional boxouts, modifications to retaining walls
351	C09B2	246	TWT revised balance plate setting for exhaust ports
352	C09C2	10	Installation of an interim fire standpipe system for the I-90 and I-93 roadways
353	C09A4	219	Ramp L SOE tieback conflict with C09A4 piles at Approach Structure #5 & soil mix obstruction
354	C09B1	226	Junction \ pullbox revised details in ITT joint openings
355	C09B2	282	Add pavement expansion joints at the ITT joints (PCN 282)
356	C17AA	165	New contract specifications for Microsilica\Wearing Course - Merged into 628
357	C01A3	255	New covers for the 13.8 KV pullboxes in the air ducts (RFI 2156.1)
358	C01A3	390	Add fireproofing requirements for pullbox covers of embedded raceway in the tunnel roof/ceiling
359	C22A1	245	Incomplete or inaccurate software or documentation
360	C07D2	362	Preparatory work for the I-90 Microsilica Placement
361	C17AA	95	Revisions to electrical design
362	C09A4	22	Construction of redesigned Frontage Road viaduct
363	C17AA	341	Addition of fireproofing to conduit mounted to roof girders in C19E1 ramps
364	C19B1	589	Revisions to expansion joint at NB-12
365	C15A3	105, 119	Groundwater/Grouting
366	C09B1	027, 078, 105	Roof Slab Deflection Re: Immersed Tube Tunnel
367	C08A1	210FW	Pump station fan replacement (RFI 652)
368	C15A2		B/BP failure to depict Fleet Center in preliminary design, B/BP failure to survey and measure elevated roadway before construction began, and B/BP failure to adequately identify obstructions for tunnels
369	C15A2		B/BP failure to incorporate MBTA objections to plans to raze a ramp near Fleet Center bc it would cause the Green Line and ramp to collapse
370	C05B1		Drawings for Ted Williams Tunnel left a gap between tunnel sections; B/BP failed to require sufficient space for ventilation in tunnel walls and failed to test the ventilation system
371	C09B3	210	BP's failure to ensure a steel dam built to keep water out of the Fort Point Channel was sealed, resulting in leak
372	C09C2	7	Signage and pavement marking revisions for I-90 and I-93
373	C09B3	7	BCC enforcement order for \$25,000 jointly against MCC, MHD and B/PB paid in total by MHD
374	C15A3	312	Miscellaneous electrical design changes coordination
375	C09B1	229	Design and construct temporary pumping station (RFI 331)

Cost Recovery Issues

Issue	Contract	Mod#	
376	C19D1	N/A	Remedial work for grout voids in PT ducts and dispute over who bears responsibility/subcontractor agreement dispute as well
377	C17A6	47	Interim lighting revisions - DUPLICATE of CR #342
378	C11A1	273	Underpinning grout heave (CP 596)
379	C19B1	118	Furnish and install additional post-tensioning blocks for Ramps ST, TC, and CT.
380	C17AA	616	Provide expansion joint in microsilica overlays at locations in C15A1 and C15A2
381	C09C2	73	Revisions to EPS temporary fire proofing
382	C09C2	39	Revisions to excavation to conform to revised drawing which changed during the bidding process
383	C01B1	150	Revisions to UPS room ventilation in Vent Building #5
384	C01B1	149	Deletion of suspended ceiling to remove conflict with follow-on cable trays
385	C01A3	257	Modifications to interface beam to add support to interface of Viaduct Street and Summer Street Over C Bridge
386	C07C1	87	Installation of sidewalk, stairways, barriers, guard-rail and parking lot at E-T and I-90 Toll Support Building
387	C17AA	526	Revisions to electrical drawings to coordinate ST-SA/CN ceiling raceway installation
388	C20B1	061FW	Modify jet fan switches
389	C20B1	148FW	Modify fan operation to conform to plc spec in the event of an emergency
390	C19E4	118	Revisions to HVAC supply/exhaust fans power and control wiring
391	C15A3	378	Furnish and install replacement light fixtures on exterior of building
392	C17AA	670	Re-route conduit and enclosure to provide access to roof girder connections at VB #4 tie-in to Ramp CS-SA West Wall. - DUPE OF 414
393	C17AA	82	Increase Quantity-Water for Roadway Dust
394	C19D1	075, 160	Revisions to Ramp SACN tower dimensions and reinforcement to resolve conflict with strut elevations (PCN 160)
395	C17AA	492	Revise electrical conduits, boxes and ceiling hatches to resolve conflict between C17AA and C20B2 in Ramp SA-CT.
396	C17AA	504	Extend safety barriers on ramps in I-93NB tunnel and Summer Tunnel
397	C15A1	6	Temporary 20" gas line (former CR #600)
398	C15A1	46	30" bypass at north bulkhead
399	C15A1	155	Temporary CS Hanover/Blackstone to Hanover/Cross (former CR #607)
400	C15A1	433	Global Settlement (former CR# 612)
400.1			A644 - Combined Sewer Force Main Blackstone/Hanover
400.3			Item 3 - Acceleration of All Milestones
400.4			Item 7 - Lost Productivity due to Acceleration
400.5			Item 8 - Escalation
400.6			Item 9 - Subcontractor Inefficiencies
401	C15A2	94	Change site conditions at the 60" CS tie-in (support MBTA ramp) (former CR #620)
402	C15A2	150	Global Settlement
403	C15A2	153	Increase slurry walls production
404	C15A2	174	Slurry wall panel rock strata higher than anticipated
405	C15A2	292	Slurry plant relocation
406	C15A3	143	Global Settlement (former CR# 640) A048 - Support of Excavation
407	C15A3	222	Location of north tower crane+C70 (former CR#641)
408	C15A3	301	Coordination study recommendations (RFI 1220) former CR#716
409	C15A3	366	Door and hardware revisions
410	C15A3	382FW	Pre-action sprinkler system
411	C19B1	632	NB 15 Junction Box Risers
412	C19D1	215	Inspection and re-grouting of PT tendons where voids had been detected after first grouting
413	C17AA	494	Revise support beams for jet fans CNS-5 and CNS-6
414	C17AA	670	Electrical revisions to VB #4, including modification to conduit and fireproofing enclosure - see CR 392
415	C29A1	9	Removal of buried obstacles
416	C15A3	16	Rework installed raceway to provide the power circuit separation required for jet fans with listed materials and methods.
417	C09B2	339	Remove and replace trench drains Project-wide/I-90 alignment - Merged into CR#718
418	C17AA	672	Cold weather delay of paving resulted in price increase of asphalt mix - Merged into CR# 628
419	C07D2	382, 396	Injection grouting and related work to repair water leak in the Arrivals tunnel roof
420	C08A1	207	Temporary sign bridge at detour 844 to avoid conflict
421	C01A3	381	Invert drainage and rebar conflict and install additional reinforcing steel

Cost Recovery Issues

Issue	Contract	Mod#	
422	C01A7	9	Utility conflicts
423	C09B1	244	Removal of baffle wall that had not been depicted in contract drawings
424	C29A1	18	Asbestos - Out of state handling contaminated soil, state-wide
425	C19B1	12	Clearance area #4, #8, and #14 revisions
426	C19B1	38	SN 13 redesign and acceleration costs
427	C19B1	57	Construction Update #5
428	C19B1	59	Additional street sweeping
429	C19B1	111	Increase quantity dispose out/state dredge
430	C19B1	115	Increase quantity - contaminated soil recycling
431	C19B1	124	Provide interim power
432	C19B1	151	Change to epoxy rebar - Update #3
433	C19B1	242	Temporary shoring at NB-7
434	C19B1	296	Asbestos abatement - CA-NA tunnel excavation
435	C19B1	312	Electrical changes - Update #6
436	C19B1	410	Acceleration - partial recover delays - cert. CPs
437	C19B1	619	Global - Issues: 053, 241, 367, 554, 586, 596; CPs: 337, 618, 725
437.1			CP-725 - Extraordinary Supervision and Engineering Costs
437.4			Issue A367 - Painting of Fire Standpipes
437.5			CP-618 - NB-13B Drilled Shaft Differing Site Condition
438	C19B1	235	Grind & fit stiffeners - TR 1&2 girders
439	C19B1	241	Temp ramps 1 & 2 steel redesign
440	C19B1	268	Revisions to Bents 18 - 21
441	C19B1	333	Revise structural steel at temp ramps
442	C19B1	425	Change of depth on TC-17 straddle bent
443	C19B1	462	Gravity feed epoxy - bal. cant. closure joints
444	C19B1	471	Additional haunches at I-93 SB and Tamp TC
445	C19B1	472	Contaminated materials - bay #3 GTI warehouse
446	C19B1	536	Acceleration of straddle Bent TC-171
447	C19B1	548	Temporary support at straddle Bent SB-7
448	C19B1	175	Additional concrete overlay - temporary Ramp 6
449	C19B1	203	Revise bracing details - temp Ramps 1,2,5
450	C19B1	210	Additional rebar - pedestals/rebar revisions - capitals
451	C19B1	261	ST-0 expansion joint segment design conflict
452	C19B1	399	Elevation conflict at segment NB-2R
453	C19B1	592	Revised grading plan in CA-NA tunnel
454	C17A6	304	Structural modifications at Bents 30 and 31 to allow for adequate overhead clearance for traffic from CN-SA to WB lanes
455	C17AA	585	Replace fireproofing ceiling pull boxes
456	C17AA	785	Replace six plenum access hatches in precast concrete ceiling of Ramp CS/SA-CT
457	C17AA	745	Modify ceiling modules to allow room for 2 new sign structures
458	C20B2	250	Relocation of ceiling-mounted sign lights in tunnel to provide motorists with clear view of signage
459	C19D1	196	Repair cracks - Tower-West Knuckle
460	C19D3	44	Global Settlement (Issue 044 only at \$460,000) South Backspan/south Tower integrated shop drawings
461	C01A6	691	Grout injection of joints at super plug
462	C17AA	802	Relocate approximate linear feet of conduit installed by C19E1 in Ramp L-CS to eliminate interference with jet fans
463	C13A1	6	Construct temporary ramp connection from existing Frontage Road NB to South Boston Bypass Road Viaduct Structure
464	C07D2	115	Ramp E-T pavement - C07C1 mod Merged into CR#628
465	C17AA	374	Repair of DENSO tape that failed after being applied to roof girder seat connectors - Merged into CR #627.02
466	C17A6	210	DENSO system repairs in C17A2 area - Merged into CR #627.02
467	C09A7	4	Construct Dorchester Branch railroad temp bridge to revised design
468	C09A7	12	New force main across Dorchester Avenue and along Ramp D
469	C09A7	32	Global Settlement (Resolution of issues to 09/10/1999) -Preliminary Design
470	C09A7	222	Global Settlement (excluding issue in CR #139)
471	C09A7	34	SOE adjacent to RR in Parcel 8
472	C09A7	39	Deletion of Ramp DD - Drawing Update

Cost Recovery Issues

Issue	Contract	Mod#	
473	C09A7	53	Transport DSM/JG spoils to swingles quarry
474	C09A7	59	Deep soil mix without fly ash
475	C09A7	63	Transport of material Types A, B and C to Quarry Hills
476	C09A7	67	Removal of material from Fort Point Channel
477	C09A7	88	Obstruction removal
478	C09A7	214	Transport materials to Subaru Pier
479	C09A7	217	Float-Out support - Bulldog barge after 11/11/1999
480	C09A4	167	Add seismic restraint (FCN 222, CP 286, RFI 715)
481	C09A4	236FW	Pavement at Albany Street
482	C09A4	253	Drainage Roll Plan F (CP 260)
483	C09A4	256	Obstructions to drilled shafts at St. #501-120/220 (CP 266)
484	C09A4	417	Fire standpipe coating revision, Ramp "A/B" & Frontage Road (CP 693)
485	C09A4	435	Remove stringers from precast piles
486	C09A4	531	Electrical pullboxes revisions App. Str. #5 (CP 743, FCN 519)
487	C09A8	1	Perimeter sheet wall design parameter change
488	C09A8	131FW	Repair of Jeanie Joint
489	C19D1	8	C15A2 36-inch water relocation/support of excavation
490	C19D1	14	Alternate interim power source
491	C19D1	39	South backspan/Abutment drilled shaft diaphragm
492	C19D1	54	HPS70W Anchor pipe seam welds
493	C19D1	75	Global Settlement
493.3			North tower obstruction overruns and Orange Line conflict
493.5			North Tower footing redesign
494	C19D1	129	Global Settlement
494.2			Revised barriers/junction boxes
494.7			Post tensioning pourbacks
494.9			IPCS conduit floorbeam/backspan openings
495	C19D1	166	Rebar congestion at Bent 6
496	C19D1	179FW	Safety rails at towers
497	C19D1	180FW	Additional barrier rebar at mainspan closure pours
498	C19D1	188FW	Additional barrier at C19D1/C19B1 and C19D1/C15A2 interfaces
499	C19D1	192FW	Bent 6 center column deck removal
500	C07D2	9	Mitigation screen revisions
501	C07D2	18	Upland non-clearance material disposal
502	C07D2	101	Membrane waterproofing installation method - Merged into CR #627.03
503	C07D2	107	Global settlement
504	C07D2	151	Provisional payment for rehabilitation to SDMH #5
505	C07D2	179	Global settlement
506	C07D2	219	Added costs for driving Arrivals tunnel; precast piles
507	C07D2	300	Premium time for electrical workers
508	C07D2	382	Global settlement
509	C07D2	213	Extension of MPA Ramp AA-E boat section
510	C07D2	250	Premium time work at MPA Ramp due to egress restriction
511	C07D2	311	Conditional adjustment to contract milestones
512	C09A4	476	Install new ATS at 1st level of storm water pump
513	C17AA	314	Leak repair (DENSO) - Merged into CR #627.04
514	C11A1	3	Additional jacking sleeves
515	C11A1	35	Utilities conflicts with 30" gas line at Kneeland Street (CP 141)
516	C11A1	40	CP 204 - Contract time extension request
517	C11A1	42	30" gas line realignment at Kneeland Street
518	C11A1	43	Signalization at Kneeland Street, Surface Road & Ramp E
519	C11A1	44	Differing site conditions - water leak at FRB b1 level
520	C11A1	45	Caisson Design (DPM 70)
521	C11A1	50	Disposal of excavated material - Ramp E
522	C11A1	51	supporting direct costs
523	C11A1	53	Water in abandoned 72" NESI line Atlantic Avenue station
524	C11A1	55	Obstruction during drilling pin pile - 168
525	C11A1	63	Temporary 12" steam line utility conflicts
526	C11A1	88	Monitoring system grouting above access tunnels to control water inflow
527	C11A1	96	16" watermain adjacent to Dewey Square intersection

Cost Recovery Issues

Issue	Contract	Mod#	
528	C11A1	277	Extend monitoring of Red Line instruments
529	C11A1	349	SOE and west drift wall redesign for B1 bedrock area
530	C11A1	361	Additional work at SSTC for temp deck construction
531	C11A1	507	Direct cost settlement for multiple CPs
532	C11A1	558	Added contract milestones
533	C11A1	584	U-UP drilling/grouting @ SSTC wall
534	C11A1	587	Schedule direction
535	C11A1	620	CP 716/735/740 Mining stacked drifts one, east and west
536	C11A1	710	CP 532A RFP "H" jet grout
537	C11A1	908	CP 1026 - Incorporation of interim milestones
538	C11A1	10	(PCN 50R3) Dewey Square 30" gas line realignment
539	C22A9	6	Replacement of I-93 SB 2-way radio system that did not function properly (FCNs 11, 12, 13, 18, 19, 21, 24, 25, and 27)
540	C17AA	559	Temporary road cross-over CANB at SA-CN
541	C17AA	711	Microsilica concrete surface preparation revisions - Merged into CR# 628
542	C09B2	351	Remove and replace existing trench drains on I-93 alignment - Merged into CR# 718
543	C19E4	166	Misc. changes - 4' metal panel strip and emergency lighting system
544	C01A3	393	Negotiation package number 2
545	C15A1	99	Acceleration of Milestone 12 (former CR# 604)
546	C15A1	180	Interim power (former CR# 608)
547	C15A2	13	Modify the location of 36" LS water line (former CR# 615)
548	C15A2	68	18" combined sewer pipe and MH at Cooper Street conflicting with ESPTC (former CR# 618)
549	C15A3	244	Relocate temp water lines (former CR #642)
550	C15A3	285	Proposed close-out modifications (former CR #643)
551	C15A3	86	Geotech instrumentation not maintained
552	C15A1	40	Revise waterproofing systems - Merged into CR #627.03
553	C15A1	536	Acceleration of excavation and concrete work
554	C15A1	703	Highway conflicts between ramp and underpinning
555	C15A2	3	Waterproofing materials - spec restriction - Merged into CR #627.03
556	C15A2	146	Asbestos contaminated material at Ramp J
557	C15A2	149	Removal of contaminated bird dropping
558	C15A2	170	Slurry wall obstruction removal
559	C15A2	181	Contaminated soil disposal
560	C15A2	229	Corrosion protection of structural steel elements - Merged into CR #627.02
561	C15A2	301	Transportation of material Type H-PI
562	C15A2	322	Additional epoxy coating change for roof girders - Merged into CR #627.02
563	C15A2	388	SPTC panel collapse
564	C15A3	18	Relocate 12" SD on Sudbury Street
565	C15A3	292	C15A1 SPTC wall demolition/excessive noise
566	C15A3	314	Delayed light fixture installation
567	C15A3	324	Design changes coordination - misc. metals
568	C15A3	356	Fan voltage conflicts
569	C15A3	357	Repair of electrical conduits damaged by follow-on contract
570	C19E1	2	Relocation of Fleet Center TV broadcast trucks
571	C19E1	15	Global Settlement
571.01			Bent F3 Redesign @ North Station (FCN #3 & #15)
571.04			16" Waterline Martha Road (FCN No. 54)
571.11			Slurry Wall Lost Productivity
571.12			CN-S Open Cut Constructin Bulkhead
572	C19E1	28	North Station rail yard survey support
573	C19E1	030, 015	Vent Building #8 - 36 Drilled Shafts (FCN 17)
574	C19E1	41	Jet grout soil stabilization (North Station SPTC walls)
575	C19E1	056, 015	MBTA/McCourt duct relocations/E7 interim power (FCN 18)
576	C19E1	075, 015	Soldier pile/Roof girder corrosion protection (FCN 102) - Merged into CR #627.02
577	C17AA	95	Revise electrical design for C15A1 and C15A2 areas as detailed in FCNs 116, 116A, 116B and 260 - DUPLICATE OF CR #361
578	C20B2	516	Furnish and factory-install undervoltage relays on the line (load) side of electrical utilization voltage switchgear equipment in 22 unit substation line-ups
579	C17AA	526	Electrical changes at Ramp ST-SA/CN - DUPLICATE OF CR #387
580	C17A6	629	Electrical equipment work-around for AIS and Dewey Square Tunnel (Duplicate of CR #632)

Cost Recovery Issues

Issue	Contract	Mod#	
581	C17A6	100	Precast panel installation conflict in DST
582	C17A6	203	Relocation of conduit for air intake structure
583	C17AA	815	Northbound leak repair - live traffic conditions - Merged into CR #627.04
584	C01A3	3	Update #1
585	C01A3	7	USPS drilled shafts
586	C01A3	10	Fargo Street - connection to haul road
587	C01A3	17	Transport of materials to Quincy
588	C01A3	100	Pay item overruns
589	C01A3	222	Surface street Mods for Ramp A opening
590	C01A3	233	Construct road for temp MBTA contractor
591	C01A3	250	Ramp F Opening
592	C01A3	278	Interim extension of Summer Street
593	C01A3	366	Sealing of leaks - Merged into CR #627.04
594	C01A3	Pending	Pending A Street Mod and related issues
595	C01A3	336	Fiber optics cable repair
596	C01A3	353	Viaduct Street - fire standpipe revisions
597	C01A3	280	Castin basin pump operators - Stand-by (CP 377)
598	C01A3	393	Negotiation Package #2
599	C01A3	402	6" water line for VB #5 hydrant
600	C01A3	403	Negotiation package #3B
601	C01A6	10	Relocation of concrete batch plant
602	C01A6	17	Quantity overruns #1
603	C01A6	519	Casting basin area/ Super-plug
604	C01A6	580	Access restraint #A/R 1
605	C01A6	586	West service road
606	C01A7	25	Modification of pedestrian pole color and finish (RFI 58.1, CP 101)
607	C04A2	42	(PCN 78) Mudmat waterproofing revision - Merged into CR #627.03
608	C04A2	69	Fire water line interference with ceiling panel hangers
609	C04A2	88	Stirrup revision at West Tunnel
610	C04A2	97	(PCN 156R1) Utility modifications at FID Kennedy Avenue
611	C04A2	152	Drain line/existing sewer conflict in N. Avenue/Dewatering
612	C04A2	103	Site revisions for EPPS Station
613	C04A2	108	Issue 1- Sewer manhole #10 and EDIC information booth conflict - (formerly CR #83)
614	C04A2	108	Issue 2 - Backfill of VB #6/TTT
615	C04A3	49	Sprinkler system pre-action control panel
616	C04A3	66	Door opening height change
617	C04A3	87	Door hardware
618	C04A3	5, 11	(PCNs 2 and 15) Contract contingency adjustment, changed cofferdam access date (time); different site conditions during caisson installment (time)
619	C04A3	51	(PCN 56R1) Duct mounted smoke detectors
620	C04A4	12	Enlarge the louver for the generator room
621	C01A6	595	Global Settlement, Ramp I & L Backfill Pour, Pending A Street/HOV ramp Mod and related issues
622	C19BA	76	Revise design of concrete box girder diaphragms at north and south tower cantilever
623	C17A3	199	Lightening/grounding loop
624	C09A4	443	Revisions to Amtrak electrical footing 228-178
625	C19B1	631	MWRA 36" sewer repairs
626	C17A6	294	Additional side exhaust ducts
629	C15A3	334	Generator RM layout and exhaust piping changes
630	C20B2	301	Provide additional diesel generator at VB#4 (FCN 242)
631	C15A3	381	Temporary fire protection and detection for office/retail area
632	C17A6	629	Direction in rev'd switchgear submittal comments - DUPE OF CR #580
633	C19BA	11	IPCS pullouts
634	C17AA	1026	Regrade Ramp SA-CS to eliminate ponding at low point
635	C08A1	9, 147	Renegotiate pay item 940.161 vertical pre-excavation and pay item 140.161 horizontal pre-excavation

Cost Recovery Issues

Issue	Contract	Mod#	
636	C07A1	1	Taxiway "W" pavement overlay, repair of hardstand areas and strengthening of utility vaults
637	C07A1	2	Simple span series 700 ACROW prefab bridge and engineering to design temp bridge detour
638	C07A1	4	Taxiway "W" island modifications
639	C07A1	10	Accelerate excavation work in the Vent Building area
640	C07A1	14	Concrete work - time extension; provide and maintain unrestricted access
641	C07A1	18	Barge fendering system at Bird Island Flats, install fire alarm system, install electrical equipment in Batter Room of MPA electrical substation and reroute electrical cables along tunnel alignment
642	C07A1	30	CLV changes, boat section
643	C07A1	37	Modifications to interim facilities ventilation, fire protection and drainage
644	C07A1	38	Revised interim facilities power system
645	C07A1	40	Electrical design changes
646	C07A1	61	Additional electrical work at Governor's Island
647	C07A1	76	Temp toll plaza and temp emergency response station
648	C07A1	78	Compensation to contractor for inefficiencies/impacts experienced during Spectacle Island loading, barging and unloading operations
649	C07A1	87	Tunnel roof openings
650	C07A1	101	Taxiway "K" Phase II revisions
651	C07A1	103	Additional dust control at Gap Gate and at Governor's Island
652	C07A1	112	Terminal A hardstand repair
653	C07A1	118	Drawing revisions, VB area and utility room/cross passages (coordination issue)
654	C07A1	135	Tunnel leak repairs at construction joints -
655	C07A1	144	Repairs to boat section drainage
656	C07A1	26	Support of excavation (formerly CR #1)
657	C07A1	31	Rental and materials rehandling costs caused by early land transfer from C07A1 to C07D (formerly CR #2)
658	C07A1	71	Addition of surface mounted conduits to replace conduits shown as being embedded in concrete (formerly CR #8)
659	C07A1	60	Revised contract limit at station (ITT interface) (formerly CR #12)
660	C07A1	64	Additional grouting at ITT interface (formerly CR #35)
661	C09B1	24	Deletion of waterproofing systems -
662	C09B1	45	C01A6 coordination east of casting basin
663	C09B1	60	Revise Access Restraint #2
664	C09B1	69	Stage II dredging delay
665	C09B1	75	Concrete crack repair
666	C09B1	80	Remove/dispose soil mix arisings after dredging
667	C09B1	97	Temporary west side power
668	C09B1	99	Ramp L SOE design revision
669	C09B1	105	Global Settlement
669.1			Changed Conditions Supply Exhaust Plenum Area (CP 71)
670	C09B1	110	Changed conditions along HZ and ESW-6 walls
671	C09B1	177	Ballast concrete additional work
672	C09B2	125	Global Settlement
673	C09B3	286	Fireproofing of pullboxes outside of plenums
674	C09B2	178	Additional electrical conduit C09A7 area
675	C08A1	151	Renegotiate PI 996.252 - MBTA rebar
676	C08A1	159, 202	Acceleration to achieve Milestone 7
676.1			I-90 Bent 5 Seismic Reinforcing Revisions
676.2			Future Risk - Bent 5 (renumbered as F085)
677	C08A1	50	Cathodic protection
678	C08A1	73	Telephone signal profiles
679	C08A1	209	Under viaduct paver transfer from C07D2
680	C08A1	190	Neptune Road
681	C08A1	196	Temporary fire protection
682	C05B1	2	Precast polymer concrete panels
683	C05B1	3	Pedestrian guardrail and base plates
684	C05B1	4	Narrative addendum changes - CLV redesign
685	C05B1	7	Revised ceiling penetrations for sign supports
686	C05B1	9	Interim electrical facilities - generator purchase
687	C05B1	10	Revisions to milestones and access restraints

Cost Recovery Issues

Issue	Contract	Mod#	
688	C05B1	16	Ceiling height revs; VB #7; security gates
689	C05B1	18	Increase interim facilities T&M funding
690	C05B1	19	Core drilling - rebar interference
691	C05B1	25	Enlarge hangar yoke plates (former CR #64)
692	C05B1	27	AFPO - ceiling system and polymer panels
693	C05B1	31	Tile removal to repair water leaks
694	C05B1	35	Additional LMC & polymer panel interfaces
695	C05B1	42	Resequenced installation of ITT ceiling
696	C05B1	62	Additional tile removal and replacement - BMIP EB outer wall
697	C05B1	74	Removal and replacement of tile - BIF tunnels
698	C05B1	92	Cove beams under VB #7
699	C05B1	110	Excess ceiling panels due to theoretical dimensioning
700	C05B1	85	Relocation of anchor bolts (former CR #10)
701	C09B2	107	TWT ceiling exhaust plenum remediation
702	C09B2	208	FCN for continuation of TWT ceiling plenum work
703	C17AA	416	Crack sealing base slab - Merged into CR #628
704	C17AA	440	Milling base slab - Merged into CR #628
705	C17A2	30	Acceleration costs for Perma Pipe system and supports
706	C17A2	19	C17A2/C14C4 Utility interface
707	C17AA	634	SB leak repair - Merged into CR #627.04
708	C17AA	715	Additional cleaning of wall panels - Merged into CR #627.04
709	C17A9	61	Purchase Street to Atlantic Avenue waterlines crossing
710	C17A6	518	Remove watermain CSP room
711	C17AA	742	Revise fireproofing ceiling pullboxes - C19E1 LCS & S-N
712	C08A1	294	Addition of roadway lighting for new roadway
713	C19E4	103	Settlement of multiple claims and changes
714	C18A2	119	Changes due to C17A6 diesel generator changes
715	C22A9	2	TWT fire detection system rework
716	C22A2	None	Alleged additional damages from failure of IPCS ("Honeywell") regarding payments to MTA electricians for manually performed tasks
717	C09G2	130	Design issues at X-34/pier cap
718	PW		Project -Wide Trench Drains Issue
718.1			Trench Drains - D001A
718.2			Trench Drains - D004A
718.3			Trench Drains - D007A
718.4			Trench Drains - D007D
718.5			Trench Drains - D009A
718.6			Trench Drains - D019E
718.7			Trench Drains - B/PB responsibility
719	C09B2	372	Add tunnel lighting and gore signage to the TWT Ramp T-S/T-A/D gore C20B2
720	C07A1	124	Repair 8-inch fire line in eastbound air flue
721	C07A1	141	Repair 8-inch fire line in westbound supply air plenum
722	C19E6	41	Pot bearing design revisions for Ramp LC-N
723	C19E6	54	Demolition/restoration of SN boat wall to accommodate LC-N
724	C21A2		Spectacle Island
725	C17A1	231	Global settlement - Merged into CR #627
725.1			72" NESI Conflict
726	C19E6	16	Roadway grading plan LC-N/CN-I.
727	C19E1	268	Raise CN-S tunnel conduit for 15' FP clearance
728	C19E4	175	Global settlement, specifically Issue 24, Glass Block Revisions
729	C17A6	350	Jacobs: Schedule initiatives; CPs 422 and 491. Shared with other SDCS. See CR #s 738, 739, 740, 741
730	C22A9	55	Implementation of two-way radio system for I-93 SB. O&M manuals
731	C09B2	359	Repair and testing of fire protection systems at I-90
732	C20B1	253	Correct fire alarm zoning in VB1 and VB2; relocate detectors out of tunnel plenum and into building areas. FCN-120
733	C08A1	299	Ductbank relocation conflict with drilled shaft 1ANB A/D-1
734	C08A1	154	Contract-wide utility conflicts
735	C17A6	396	Asbestos abatement south of Ramp J - CP 556
736	C08A1	250	Trench drain replacement - FCN 138 (C07C1 transfer) - Merged into CR #718

Cost Recovery Issues

Issue	Contract	Mod#	
737	C19E6	25	Install ductbank waterproofing requirements at S-N ramp (FCN 20)
738	C17A6	350	D011A: Schedule initiatives; CPs 422 and 491. Shared with other SDCS. See CR #s 729, 739, 740, 741
739	C17A6	350	D009B: Schedule initiatives; CPs 422 and 491. Shared with other SDCS. See CR #s 729, 738, 740, 741
740	C17A6	350	D017A: Schedule initiatives; CPs 422 and 491. Shared with other SDCS. See CR #s 729, 738, 739, 741
741	C17A6	350	D022A: Schedule initiatives; CPs 422 and 491. Shared with other SDCS. See CR #s 729, 738, 739, 740
742	C17A6	400	Jacobs: CP 458 Direct costs of contract change proposals. Shared with other SDCs. See also 743, 744, 745, 746
743	C17A6	400	D011A: CP 458 Direct costs of contract change proposals. Shared with other SDCs. See also 742, 744, 745, 746
744	C17A6	400	D009B: CP 458 Direct costs of contract change proposals. Shared with other SDCs. See also 742, 743, 745, 746
745	C17A6	400	D017A: CP 458 Direct costs of contract change proposals. Shared with other SDCs. See also 742, 743, 744, 746
745.12			Revised 15k Volt Pull Boxes
746	C17A6	400	D022A: CP 458 Direct costs of contract change proposals. Shared with other SDCs. See also 742, 743, 744, 745
747	C09C2	86	CP 114 - Ramp XE Modifications
748	C09A3	12	Various cost proposals within Mod pertaining to VB #1 Access delays and changes
749	C17AA	744	Replace wall panel top connections - Merged into CR #627
750	C17AA	1095	Asphalt pavement grinding - Rideability - Merged into CR #628
751	C17A6	41	FCN 67/CP 51 - Additional requirements AIS transfer switch
752	C17A6	137	FCN 108/CP 188 - Revisions to jet fan conduit routing
753	C17A6	350	D018A: FCN 301/CP 491 - Damages related to NBO delays. Shared with other SDCs. See also CR #s 729 and 738 - 741.
754	C17A6	216	FCN 315/CP 537 - DST interim fire alarm and carbon monoxide systems
755	C18A2	6	Extra monorail steel
756	C18A2	63	FCN 55 - Gable end of barrel vault
757	C17A6	539	FCN 376/CP 750 15 KV pull boxes in AIS
758	C18A2	33	Tube steel brace at column line E
759	C17AA	1076	Project-wide leak repair - CSU 11 - Merged into CR #627.04
760	C20B2	668	Investigate water infiltration at I-90 and I-93 - Merged into CR #627.04
761	C20B2	634	SL & TL system at Ramp T-A/D (FCN 432 and 454)
762	C17A6	400	D018A: CP 458 Direct costs of contractor change proposals. Shared with other SDCs. See also 742, 743, 744, 745, and 746
762.09			Additional Manholes/Catchbasins.(CP 1362)
763	C29A1	128	Platform redesign at Bridge #4 (East) Opening/CP 131
764	C19BA	27	Additional conduit between Bents B15 and B33
765	C22A2	811	Final settlement
766	C22A1	13	Access restraints and milestone date revisions
767	C22A1	3	Vehicle loop detectors
768	C22A1	4	Additional IPCS work on South Boston Haul Road
769	C22A1	9	Install AM radio radiator wire portal to portal in both inverts
770	C22A1	16	Incorporation of comments and deficiencies for PS&E
771	C22A1	17	Addition of fire detection/alarm equipment in VB #6
772	C22A1	18	Addition of fire detection/alarm equipment in VB #7
773	C22A1	19	Sign changes - South Boston Access to TWT
774	C22A1	20	Fire alarm system in ERS and CMF
775	C22A1	23	Warehouse facilities
776	C22A1	27	Addition of security system in East Boston ERS/ESS
777	C22A1	36	Provide non-PVC jacketed control cable (former CR #77)
778	C22A1	40	Relocation of equipment and associated signal routing
779	C22A1	46	Access control/security system, telephone system and fire alarm system tie-in for ERS #2 in South Boston
780	C22A1	59	Specification and drawing changes
781	C22A1	195	Warehousing
782	C22A1	234	Fire detection system deficiencies at VB #6 and VB #7

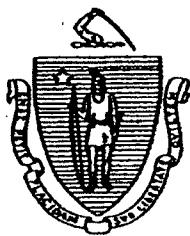
Cost Recovery Issues

Issue	Contract	Mod#	
783	C22A2	200	Revised access restraints and milestone dates
784	C22A2	252	Direct costs of contractor change proposals
785	C22A2	9	Equipment cabinet support frames (FCNs 37, 38, 39, 40, and 42)
786	C22A2	430	Simulcast installation
787	C22A2	461	Correct two-way radio distortion
788	C22A2	466	BOCC: Extend software engineering support
789	C22A2	352	Loop detector replacement - Section II Mod not yet finalized
790	C09B2	364	Wabocrete at superplug joints and plenum leak proofing
791	C19BA	90	Leak injection roof wall joints - CASB & CANB tunnels Merged into CR #627.04
792	C08A1	316	Cull out and dispose of ACM from C08A1 @ Subaru
793	C09D2	20	Seawall revisions at Screen House
794	C21C2	71	Final settlement
795	C17A6	845	Anticipated ACM and utility impacts to drain line installation
796	C17A3	99	Revised Dwg. & Spec. of Conformed Contract Documents Per Update No. 7
797	C17A3	43	Revise Drawings and Specifications of Conformed Contract Documents per Update #4
798	C17A3	55	Revise Drawings and Specifications of Conformed Documents per Update #6
799	C17AA	1190	Winter Maintenance Support - Merged into #CR 627.04
800	C19BA	52	Enlarge Cable Anchorage Openings at Zakim Bridge
801	C09A4	999	Thrust Pit Claim
802	C17AA	353	Modify Exhaust Ducts VB #4 - New Computer Model
803	C17AA	994	Southbound Leak Repair - Live Traffic Conditions. Merged into CR #627.04
804	C17AA	1151	South Bay Mall Scope Transfer - C09C2
805	C17AA	1222	Repair Fireproofing Due to Leaks CSU-11.5 - Merged into CR #627.04
806	C22A1	306	Final Settlement - I-90/TWT Furnish/Install IPCS
807	C18A2	8	Equipment Access Hatch (FCN #001, RFI #0005)
808	C18A2	87	New Fire Enclosure Around Access Hatch Opening (FCN No. 79)
809	C18A2	127	Elevator Shaft Wall Infill (FCN No. 61)
810	C18A2	9	Transfer Girders Fabrication Delay
811	C18A2	29	Standby Switchgear Room #302 (FCN No. 46)
812	C18A2	76	Standby Electric Room Additional Ceiling (FCN 72)
813	C18A2	35	T31 Granite Anchors
814	C18A2	67	600V Rated Wires & Cables (FCN 66)
815	C18A2	97	Revise Granite Support Analysis (RFI 193)
816	C18A2	98	Coordination With C22A9, Hardware and Security (FCN 85)
817	C18A2	105	Door Height Adjustment (FCN No. 97)
818	C20B1	281	Global Settlement
819	C09A4	496	FCN 588 - Pullbox Cover Fireproofing
627	PW		Project Wide Waterproofing Issue
627.1			Waterproofing - Leaks due to Design Errors on C19E1 and C11A1
627.3			Waterproofing - Materials
627.4			Waterproofing - Corrosion
628	PW		Project Wide Pavement Issue
820	PW	none	Project-wide delay
820.a			Potential Project Wide Acceleration Recovery - Project
820.b			Potential Elements of Project Wide Delay Recovery - D017A
820.c			Potential Elements of Project Wide Delay Recovery - D015A
820.d			Potential Elements of Project Wide Delay Recovery - D022A
F081	C08A1		Replace Lighting Circuit and Feeders
F082	C08A1		Estimated Claim
F083	C08A1		Un-approved Mods currently listed in Oracle
F084	C08A1		Anticipated Engineering Claim
F085	C08A1		Bent - 5 (renumbering of 676.2)
F151	C15A3		Estimated Claim-Impacts resulting from electrical changes
F152	C15A3		Un-approved Mods
F171	C17A6		Un-approved Mods
F172	C17A6		Estimated Claim-Impacts resulting from changes
F173	C17A9		Underpinning
F174	C17A9		Acceleration due to Underpinning
F181	C17A6		Anticipated Delay Claim for CR #580 - Electrical equipment work-around for AIS and Dewey Square Tunnel.

Cost Recovery Issues

Issue	Contract	Mod#
F191	C19E6	Un-approved Mods
F192	C19E6	Estimated Claim-Impacts resulting from changes
F201	C20B2	15kv Cable Rework @ AIS Vault
F202	C20B2	Un-approved Mods
F221	C22A2	Future cost I-90/I-93 radio system

EXHIBIT D



THE COMMONWEALTH OF MASSACHUSETTS
OFFICE OF THE ATTORNEY GENERAL

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FOR SETTLEMENT PURPOSES ONLY – WITHOUT PREJUDICE
PRIVILEGED AND CONFIDENTIAL

February 7, 2006

David J. Hatem, PC
Donovan Hatem LLP
Two Seaport Lane
Boston, MA 02210

Re: Settlement Demand

Dear Mr. Hatem:

As you know, the Massachusetts Office of the Attorney General (“AGO”) Cost Recovery Program has reviewed specific cost recovery issues arising out of several design contracts of the Central Artery/Tunnel Project (“CA/T Project”) for which Bechtel/Parsons Brinckerhoff JV (“B/PB”) and the respective section design consultants (“SDCs”) may be liable to the Commonwealth of Massachusetts. All such parties have engaged in a lengthy fact-finding and evaluation process. We appreciate your willingness to participate in this process that has narrowed the issues in dispute and has resulted in a fair and expeditious identification of the cost recovery claims.


After a careful review, the AGO has concluded that B/PB and certain SDCs are liable for costs incurred by the Commonwealth of Massachusetts. Therefore, the AGO makes settlement demand on B/PB and the SDCs, as described on Attachment A of this letter. This settlement demand is made with respect to all known issues under the design contracts listed on Attachment A. Provided B/PB and the SDCs make an acceptable proposal, the AGO is prepared to give B/PB and the named SDCs a general release, except for all issues relating to latent defects.

Because B/PB and the SDCs participated in the fact-finding and review process, you should already be aware of the facts and circumstances that form the basis of the specific determinations.

David J. Hatem, PC
February 7, 2006
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As previously discussed, we request a response to include an offer by the week of February 20, 2006.

Very truly yours,


Stephanie S. Lovell
First Assistant Attorney General

ATTACHMENT A

**SDCs and B/PB Demand and Revised Demand
Central Artery / Tunnel Project**

CR#	Contract	Description	SDC		B/PB	
			Original Demand	Revised Demand	Original Demand	Revised Demand
D001A HDR Engineering						
153	C01A3	Revisions to FUKO Hose System	0	0	13,440	24,765
196	C01A3	Leaks at interface joint between C01A3 and C04A2 (CP 140)	1,485,160	739,050	0	0
198	C01A3	Inadequate pull box covers	65,717	66,823	0	0
358	C01A3	Add fireproofing requirements for pullbox covers of embedded raceway in the tunnel roof / ceiling	0	0	230,141	198,337
421	C01A3	Invert drainage and rebar conflict and install additional reinforcing steel	9,616	9,616	0	0
589	C01A3	Surface street Mods for Ramp A opening	0	0	60,000	189,493
590	C01A3	Construct road for temp MBTA contractor	0	0	47,776	48,997
591	C01A3	Ramp F Opening	0	0	691,941	735,268
593	C01A3	Sealing of leaks	0	0	267,500	588,500
595	C01A3	Fiber optics cable repair	0	0	50,694	53,869
600	C01A3	Negotiation package #3B	65,703	69,817	0	0
621	C01A6	Pending A Street/HOV ramp Mod and related issues	0	0	90,000	179,269
* 718.1	PW	Trench Drains	0	113,926	0	0
D001A HDR Engineering TOTAL			\$1,626,196	\$999,232	\$1,451,492	\$2,018,498

D004A HDR Engineering, Inc.

041	C04A3	Support beam relocation at second floor exhaust stacks	10,000	11,370	0	0
042	C04A3	Revisions to precast panel dimensions	53,292	60,592	0	0
612	C04A2	Site revisions for EPPS Station	5,127	13,146	0	0
613	C04A2	Sewer manhole #10 and EDIC information booth conflict	3,618	9,275	0	0
614	C04A2	Backfill of VB #6/ITT	0	0	6,312	13,846
618	C04A3	Contract contingency adjustment, changed cofferdam access date (time); different site conditions during caisson installment (time)	14,672	28,561	0	0
* 718.2	PW	Trench Drains	0	83,808	0	0
D004A HDR Engineering, Inc. TOTAL			\$86,789	\$206,752	\$6,312	\$13,846

D005B CPF/Domenech and Hicks, Inc.

685	C05B1	Revised ceiling penetrations for sign supports	0	0	258,560	274,644
686	C05B1	Interim electrical facilities - generator purchase	0	0	57,840	67,697
688	C05B1	Ceiling height revs; VB #7; security gates	0	0	93,015	108,867

* post 2004 demand, no executed demand letter

**SDCs and B/PB Demand and Revised Demand
Central Artery / Tunnel Project**

CR#	Contract	Description	SDC		B/PB	
			Original Demand	Revised Demand	Original Demand	Revised Demand
D005B CPF/Domenech and Hicks, Inc.						
689	C05B1	Increase interim facilities T&M funding	0	0	483,578	606,126
690	C05B1	Core drilling - rebar interference	95,359	0	0	0
691	C05B1	Enlarge hangar yoke plates	40,632	0	0	0
695	C05B1	Resequenced installation of ITT ceiling	0	0	78,933	102,875
696	C05B1	Additional tile removal and replacement - BMIP EB outer wall	0	0	287,073	305,049
697	C05B1	Removal and replacement of tile - BIF tunnels	0	0	1,358,505	1,443,570
698	C05B1	Cove beams under VB #7	0	0	54,074	85,319
700	C05B1	Relocation of anchor bolts	0	0	13,736	21,322
701	C09B2	TWT ceiling exhaust plenum remediation	0	0	1,289,671	900,000
702	C09B2	FCN for continuation of TWT ceiling plenum work	0	0	748,515	795,385
D005B CPF/Domenech and Hicks, Inc. TOTAL			\$135,991	\$0	\$4,723,500	\$4,710,854
D007A Gannett Fleming						
Z23.a	C07D2	Pavement Failure - BPB portion	0	0	668,750	700,261
* Z23.b	C07D2	Pavement Failure - SDC portion		1,222,347		0
641	C07A1	Barge fendering system at Bird Island Flats	0	0	27,124	36,991
643	C07A1	Modifications to interim facilities ventilation, fire protection and drainage	0	0	66,636	77,992
644	C07A1	Revised interim facilities power system	0	0	183,389	215,813
645	C07A1	Electrical design changes	0	0	124,300	161,466
648	C07A1	Compensation to contractor for inefficiencies/impacts experienced during Spectacle Island	0	0	146,460	172,964
649	C07A1	Tunnel roof openings	0	0	67,060	90,000
653	C07A1	Drawing revisions, VB area and utility room/cross passages	0	0	55,007	80,000
657	C07A1	Rental and materials rehandling costs caused by early land transfer from C07A1 to C07D	0	0	551,470	0
658	C07A1	Addition of surface mounted conduits to replace conduits shown as being embedded in concrete	0	0	62,360	93,967
659	C07A1	Revised contract limit at station (ITT interface)	3,000	6,283	3,000	6,283
660	C07A1	Additional grouting at ITT interface	0	0	853,144	179,303
* 718.3	PW	Trench Drains	0	127,238	0	0
720	C07A1	Repair 8-inch fire line in eastbound air flue	38,742	41,168	0	0

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**SDCs and B/PB Demand and Revised Demand
Central Artery / Tunnel Project**

CR#	Contract	Description	SDC		B.PB	
			Original Demand	Revised Demand	Original Demand	Revised Demand
D007A Gannett Fleming						
721	C07A1	Repair 8-inch fire line in westbound supply air plenum	44,940	47,754	0	0
D007A Gannett Fleming TOTAL			\$86,682	\$1,444,790	\$2,808,700	\$1,815,040
D007D Fay Spofford Thorndike/TYLin						
093	C07D2	Modify lighting levels which did not conform to Design Standards	185,665	422,202	185,665	0
152	C07D2	Modify height of temp light poles which conflicted with overhead duct	20,636	25,807	0	0
192	C07D2	Approach slab elevations changes and vehicle barrier elevations along Ramp U-T/A	72,414	73,513	0	0
201	C07D2	CPs 448, 270, 307, 332, and 349	2,196,157	1,050,000	0	0
238	C07D2	Thickened slab detail	22,292	30,180	0	0
500	C07D2	Mitigation Screen Revisions	26,387	0	0	0
502	C07D2	Membrane Waterproofing Installation Method	0	0	34,500	0
503	C07D2	Global Settlement	143,126	151,614	102,794	108,956
505	C07D2	Global Settlement	43,625	59,063	0	0
508	C07D2	Global Settlement	15,498	19,154	0	0
* 718.4	PW	Trench Drains	0	219,484	0	0
D007D Fay Spofford Thorndike/TYLin TOTAL			\$2,725,800	\$2,051,017	\$322,959	\$108,956
D008A Fay Spofford Thorndike/Rizzo Assoc.						
676.1	C08A1	I-90 Bent 5 Seismic Reinforcing Revisions	737,528	700,731	0	0
676.2	C08A1	Future Risk - Bent 5	1,296,561	0	0	0
677	C08A1	Cathodic Protection	61,304	76,307	0	0
* 734	C08A1	Contract-wide utility conflicts	0	21,251	0	0
* F081	C08A1	Replace Lighting Circuit and Feeders		1,137,000		0
* F082	C08A1	Estimated Claim		510,087		0
* F083	C08A1	Un-approved Mods currently listed in Oracle		794,425		0
* F084	C08A1	Anticipated Engineering Claim		105,500		0
* F085	C08A1	Bent - 5		1,296,561		0
D008A Fay Spofford Thorndike/Rizzo Assoc. TOTAL			\$2,095,393	\$4,641,862	\$0	\$0
D009A Maguire/Harris						
353	C09A4	Ramp L SOE tieback conflict with C09A4 piles at Approach Structure #5 & soil mix obstruction	26,400	36,612	0	0

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**SDCs and B/PB Demand and Revised Demand
Central Artery / Tunnel Project**

CR#	Contract	Description	SDC		B.PB	
			Original Demand	Revised Demand	Original Demand	Revised Demand
D009A Maguire/Harris						
469	C09A7	Preliminary Design	0	0	0	274,271
471	C09A7	SOE Adjacent to RR in Parcel 8	203,040	277,336	0	0
484	C09A4	Fire Standpipe Coating Revision, Ramp "A/B" & Frontage Road (CP 693)	125,000	135,617	0	216,987
487	C09A8	Perimeter Sheet Wall Design Parameter Change	190,276	210,537	0	0
512	C09A4	Install new ATS at 1st level of storm water pump	253,900	269,774	0	0
* 718.5	PW	Trench Drains	0	103,450	0	0
* 732	C20B1	Correct fire alarm zoning in VB1 and VB2; relocate detectors out of tunnel plenum and into building areas. FCN-120	0	105,555	0	0
819	C09A4	Add fireproofing requirements for pullbox covers of embedded raceway in the tunnel roof/ceiling (previously noted as #358)	52,000	38,076	0	326,152
D009A Maguire/Harris TOTAL			\$850,616	\$1,176,957	\$0	\$817,410

D009B Gannett Fleming

354	C09B1	Junction pullbox revised details in ITT joint openings	51,100	107,080	51,100	107,080
355	C09B2	PCN 282 (125 is the Global) Add pavement expansion joints at the ITT joints - Paid under Mod 125, See CR #672	15,200	15,200	30,400	37,091
603	C01A6	Super-plug: Casting basin area	0	0	3,100,000	600,000
663	C09B1	Revise Access Restraint No. 2	0	0	6,635,736	500,000
665	C09B1	Concrete crack repair	0	0	937,047	951,270
669.1	C09B1	CHANGED CONDITIONS SUPPLY EXHAUST PLENUM AREA (CP 71)	49,092	109,516	0	0
D009B Gannett Fleming TOTAL			\$115,392	\$231,796	\$10,754,283	\$2,195,441

D009C Berger/Lochner/Stone & Webster (JV)

* 747	C09C2	CP-114 Ramp XE Modifications		95,476		0
D009C Berger/Lochner/Stone & Webster (JV) TOTAL				\$95,476		\$0

D011A Seelye Stevenson/Deleuw Cather (JV)

* 241.a	C11A1	BECO Manhole (Paid under C17A1 Mods A191 and A231 and CP304)	0	300,623	0	0
515	C11A1	CP141 UTILITIES CONFLICTS W/30" GAS LINE @ KNEELAND ST.	400,000	1,456,900	0	0
536	C11A1	CP532A - RFP "H"-JET GROUT	20,761	42,343	0	0
538	C11A1	CP069 DEWEY SQUARE 30" GAS LINE REALIGNMENT	844,336	2,266,812	844,336	0

* post 2004 demand, no executed demand letter

**SDCs and B/PB Demand and Revised Demand
Central Artery / Tunnel Project**

CR#	Contract	Description	SDC		B/PB	
			Original Demand	Revised Demand	Original Demand	Revised Demand
D011A Seelye Stevenson/Deleuw Cather (JV)						
D011A Seelye Stevenson/Deleuw Cather (JV) TOTAL			\$1,265,097	\$4,066,678	\$844,336	\$0
D012A Ammann & Whitney/Rizzo/Vollmer & BLSW						
* 062	C13A1	Changes to Guardrails	2,700	90	0	0
* 092	C12A3	Beveled Sole Plate Bearings	67,000	50,000	0	0
* 172	C12A3	Bridge Railing Revisions	3,500	140	0	0
* 172	C12A3	Bridge railing revisions to conform to the ADA and Massachusetts Building Code.		0	12,000	12,000
* 206	C12A3	Change in I-Beam Elevation	56,500	34,770	0	0
D012A Ammann & Whitney/Rizzo/Vollmer & BLSW TOTAL			\$129,700	\$85,000	\$12,000	\$12,000
D015A J.E. Sverdrup Civil, Inc.						
157	C15A2	Common South Abutment Wall, PCN #350	0	0	31,200	54,209
160	C15A2	Routing for Power and Instrumentation Conduits Serving Jet Fans on Ramp SA-CN revised. (I-151)	0	0	34,331	0
235	C15A1	Conflict Ramp RJ Sign Bridge and Slurry Wall	0	0	28,428	39,807
251	C15A3	Electrical Update	0	0	20,204	37,117
298	C15A1	Interim Electric Substation	0	0	535,795	569,345
327	C15A3	Utility Relocation	0	0	483,344	549,562
328	C15A3	Traffic / Work Deck Coordination	0	0	132,539	150,697
330	C15A3	Kodiak Tower Crane	0	0	233,594	265,596
365	C15A3	Groundwater / Grouting	0	0	1,900,154	2,207,205
391	C15A3	Furnish and install replacement light fixtures on exterior of building	0	0	10,000	5,000
397	C15A1	TEMPORARY 20" GAS LINE	0	0	91,477	102,331
399	C15A1	TEMP CS HANOVER/BLACKSTONE TO HANOVER/CROSS	0	0	105,405	134,152
400.1	C15A1	A644 - COMBINED SEWER FORCE MAIN BLACKSTONE/HANOVER	0	0	43,997	55,138
400.3	C15A1	Item 3 - Acceleration of All Milestones	0	0	1,069,038	1,135,978
400.4	C15A1	Item 7 - Lost Productivity due to Acceleration	0	0	754,094	801,313
400.5	C15A1	Item 8 - Escalation	0	0	861,585	915,535
400.6	C15A1	Item 9 - Subcontractor Inefficiencies	0	0	33,703	35,813
401	C15A2	CHANGE SITE CONDITIONS AT THE 60" COMBINED SEWER TIE IN (Support MBTA Ramp)	0	0	90,780	50,000

* post 2004 demand, no executed demand letter

**SDCs and B/PB Demand and Revised Demand
Central Artery / Tunnel Project:**

CR#	Contract	Description	SDC		B.PB	
			Original Demand	Revised Demand	Original Demand	Revised Demand
<u>D015A J.E. Sverdrup Civil, Inc.</u>						
406	C15A3	A048 - Support of Excavation	0	0	100,000	113,700
407	C15A3	LOCATION OF NORTH TOWER CRANE	0	0	64,874	73,761
546	C15A1	INTERIM POWER	0	0	36,600	44,954
547	C15A2	MODIFY THE LOCATION OF 36"LS WATER LINE	0	0	63,500	110,320
548	C15A2	18"COMBINED SEWER PIPE & MH @ COOPER ST CONFLICTING W/ESPTC	0	0	544,518	300,000
549	C15A3	RELOCATE TEMP WATER LINES	0	0	157,836	211,640
* 820.c	PW	Potential Elements of Project Wide Delay Recovery		0		10,027,500
* F151	C15A3	Estimated Claim		0		285,808
* F152	C15A3	Un-approved Mods		0		128,385
D015A J.E. Sverdrup Civil, Inc. TOTAL			\$0	\$0	\$7,426,996	\$18,404,866
<u>D017A Fay, Spofford, Thorndike/Needles, Tammen</u>						
* 241.b	C11A1	BECO Manhole (Paid under C17A1 Mods A191 and A231 and CP304)	0	300,623	0	300,623
* 363	C17AA	Addition of fireproofing to conduit mounted to roof girders in C19E1 ramps	0	0	0	173,257
* 705	C17A2	Acceleration costs for Perma Pipe system and supports	0	0	0	0
* 725.1	C17A1	72" NESI Conflict	0	443,981	0	0
* 745.12	C17A6	Revised 15k Volt Pull Boxes	0	241,743	0	0
* 820.b	PW	Potential Elements of Project Wide Delay Recovery		0		6,452,100
* F171	C17A6	Un-approved Mods		79,723		0
* F172	C17A6	Estimated Claim		21,919		0
* F173	C17A9	Underpinning		159,447		0
* F174	C17A9	Acceleration due to Underpinning		375,000		0
D017A Fay, Spofford, Thorndike/Needles, Tammen TOTAL			\$0	\$1,622,436	\$0	\$6,925,980
<u>D018A Weidlinger/Edwards & Kelcey (JV)</u>						
* 342	C17A6	Interim Lighting Revisions	0	29,983	0	0
* 580	C17A6	Electrical equipment work-around for AIS and Dewey Square Tunnel	0	5,069,177	0	0
* 714	C18A2	Changes due to C17A6 diesel generator changes	0	68,394	0	0

* post 2004 demand, no executed demand letter

**SDCs and B/PB Demand and Revised Demand
Central Artery / Tunnel Project**

CR#	Contract	Description	SDC		B/PB	
			Original Demand	Revised Demand	Original Demand	Revised Demand
D018A Weidinger/Edwards & Kelcey (JV)						
* 751	C17A6	FCN 67/CP 51 - Additional requirements AIS transfer switch	0	28,438	0	0
* 752	C17A6	FCN 108/CP 188 - Revisions to jet fan conduit routing	0	10,207	0	0
* 755	C18A2	Extra monorail steel	0	16,680	0	140,988
* 756	C18A2	FCN 55 - Gable end of barrel vault	0	58,428	0	0
* 757	C17A6	FCN 376/CP 750 15 KV pull boxes in AIS	0	56,565	0	0
* 758	C18A2	Tube steel brace at column line E	0	23,195	0	0
* 762.09	C17A6	Additional Manholes/Catchbasins	0	19,870	0	0
* 807	C18A2	Equipment Access Hatch	0	0	0	18,746
* 808	C18A2	New Fire Enclosure Around Access Hatch Opening	0	35,730	0	0
* 809	C18A2	Elevator Shaft Wall Infill	0	5,490	0	0
* 811	C18A2	Standby Switchgear Room #302	0	22,919	0	0
* 812	C18A2	Standby Electric Room Additional Ceiling	0	22,504	0	0
* 814	C18A2	600V Rated Wires & Cables	0	264,182	0	0
* 815	C18A2	Revise Granite Support Analysis	0	0	0	45,110
* 817	C18A2	Door Height Adjustment	0	3,866	0	0
* F181	C17A6	Anticipated Delay Claim for CR #580 - Electrical equipment work-around for AIS and Dewey Square Tunnel		4,000,000		0
D018A Weidinger/Edwards & Kelcey (JV) TOTAL			\$0	\$9,735,628	\$0	\$204,844

D019B Greenman-Pedersen/Vollmer/Ammann Whitney

095	C19B1	CANTILEVERED ELEC.SUPPORTS-D3 INTERFACE	5,639	7,837	0	0
105	C19B1	DRAINAGE CHANGES-CONSTRUCTION UPDATE # 6	3,259	4,689	0	0
108	C19B1	MBTA COMM.COLL.STA.CABLE TROUGH INSTALL	58,310	62,980	0	0
110	C19B1	BW&S METER PIT COVERS ON RUTHERFORD AVE.	5,064	5,381	0	0
112	C19B1	EPOXY REBAR-NB10 & NB11 STRADDLE BEAMS	14,510	18,929	0	0
115	C19B8	Increase weld size in tub girder diaphragms.	69,183	78,661	0	0
123	C19B1	DAPPED CONNECTIONS AT TEMP RAMP 6	0	0	121,005	128,582
124	C19B1	ADD.WORK-ERECT.LOADS BAL.CANTILEVER SEGS	39,000	58,421	0	0

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CR#	Contract	Description	SDC		B.PB	
			Original Demand	Revised Demand	Original Demand	Revised Demand
D019B Greenman-Pedersen/Vollmer/Ammann Whitney						
140	C19B1	DESIGN & CONSTRUCT ALT.FALSEWORK-ST2/CT2	85,118	94,387	0	0
141	C19B1	DESIGN & CONSTRUCT-CT2, CT3, CT15	61,807	81,696	0	0
145	C19B1	ADD.CONC.OVERLAY-TEMP RAMPS 1,2, & 5	0	0	54,315	62,240
149	C19B1	RE-WORK BEAR.PLATES-NB-8 UP.STRAD. BENT	2,324	2,470	0	0
150	C19B1	CT/TC CROSSOVER CHANGES	15,875	16,869	0	0
151	C19B1	CONSTRUCTION UPDATE # 6	219,829	233,594	0	0
156	C19B1	RAMP LT-2 CONFLICT WITH BENT 5 FOOTING	11,031	11,721	0	0
163	C19B1	Rework of conduit and cages in pier segments.	53,392	95,481	0	0
193	C19B1	UNIVERSAL INSERT BOXES AT RAMP TC	6,715	7,136	0	0
215	C19B1	PARTIAL ERECTION SPAN SB7R-TEMP RAMP 7	33,871	44,958	0	0
234	C19B1	ADDITIONAL CLEANING-EXISTING DRAIN LINES	0	0	454,919	517,243
242	C19B1	REV.PLATE THICKNESS-TOP FLANGE & STUB	3,945	4,876	0	0
271	C19B1	CT-1 ERECTION REVISION	49,895	71,168	0	0
301	C19B1	ADDITIONAL WORK-CT-26 & CT-27	119,109	126,567	0	0
333	C19B1	ERECTION TOWER CONFLICTS	53,594	69,062	0	0
337	C19B1	TEMP.SUPPORT AT STRADDLE BENT TC-17L	155,465	204,554	0	0
339	C19B1	FUTURE PT CONFLICTS	749,000	545,800	0	0
344	C19B1	REVISIONS TO JOINT AT PIER TC-3	43,800	86,602	0	0
364	C19B1	REVISIONS TO EXPANSION JOINT AT NB-12	22,097	48,025	0	0
379	C19B1	ADDITIONAL PT BLOCKS-RAMPS ST. TC,CT	30,000	39,136	0	0
411	C19B1	NB 15 Juction Box Risers	510,110	212,535	510,110	212,535
426	C19B1	SN 13 REDESIGN AND ACCELERATION COSTS	244,000	279,802	96,000	109,152
431	C19B1	PROVIDE INTERIM POWER	0	0	330,000	375,210
432	C19B1	CHANGE TO EPOXY REBAR-UPDATE # 3	41,042	50,725	0	0
433	C19B1	TEMPORARY SHORING AT NB-7	47,746	62,286	200,000	227,400
437.1	C19B1	CP-725 - Extraordinary Supervision and Engineering Costs	192,746	221,715	0	0
437.4	C19B1	Issue A367 - Painting of Fire Standpipes	0	0	567,100	625,350

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CR#	Contract	Description	SDC		B/PB	
			Original Demand	Revised Demand	Original Demand	Revised Demand
<u>D019B Greenman-Pedersen/Vollmer/Ammann Whitney</u>						
437.5	C19B1	CP-618 - NB-13B Drilled Shaft Differing Site Condition	0	0	374,500	0
438	C19B1	GRIND & FIT STIFFENERS-TR1&2 GIRDERS	29,356	46,838	0	0
439	C19B1	TEMP RAMPS 1 & 2 STEEL REDESIGN	48,000	77,540	0	0
446	C19B1	ACCELERATION OF STRADDLE BENT TC-17L	0	0	219,141	249,163
447	C19B1	TEMPORARY SUPPORT AT STRADDLE BENT SB-7	50,400	67,994	0	0
448	C19B1	ADDITIONAL CONCRETE OVERLAY-TEMP RAMP 6	0	0	66,764	87,065
449	C19B1	REV.BRACING DETAILS-TEMP RAMPS 1,2, & 5	31,199	33,153	0	0
450	C19B1	ADD.REBAR-PEDESTALS/REBAR REVS.-CAPITALS	29,750	32,570	0	0
452	C19B1	ELEVATION CONFLICT AT SEGMENT NB-2R	38,901	41,337	0	0
* 633	C19BA	IPCS pullouts	0	26,426	0	0
* 764	C19BA	Additional Conduit between Bents 15 and 33		193,364		0
D019B Greenman-Pedersen/Vollmer/Ammann Whitney TOTAL			\$3,175,082	\$3,367,285	\$2,993,854	\$2,593,940
<u>D019D Howard Needles Tammen Bergandof</u>						
158	C19D1	Redesign of closure wall footing to avoid utility conflict (CP 118)	0	0	288,284	327,779
179	C19D1	Bent 6 center column adjustment (CP 145)	209,760	222,894	0	0
263	C19D1	North SACN ramp strut elevation revisions	59,691	63,429	59,691	63,429
460	C19D3	South backspan/South tower integrated shop drawings	10,000	22,234	0	0
491	C19D1	South Backspan/Abutment Drilled Shaft Database	32,229	47,490	0	0
492	C19D1	HPS70W Anchor Pipe Seam Welds	26,127	32,112	0	0
493.3	C19D1	North tower obstruction overruns and Orange Line conflict	172,107	245,009	0	0
493.5	C19D1	North Tower footing redesign	102,554	136,439	0	0
494.2	C19D1	Revised barriers/junction boxes	9,876	15,479	9,876	15,479
494.7	C19D1	Post tensioning pourbacks	78,638	146,869	0	0
494.9	C19D1	IPCS conduit floorbeam/backspan openings	37,290	58,445	0	0
D019D Howard Needles Tammen Bergandof TOTAL			\$738,272	\$990,400	\$357,851	\$406,687

* post 2004 demand, no executed demand letter

**SDCs and B/PB Demand and Revised Demand
Central Artery / Tunnel Project**

CR#	Contract	Description	SDC		B/PB	
			Original Demand	Revised Demand	Original Demand	Revised Demand
D019E YHB/URS/TAMS (JV)						
116	C19E1	Temporary shoring towers for pedestrian bridge temporary support system	34,287	36,434	0	0
117	C19E1	Emergency repairs to pedestrian bridge support system	8,169	8,681	0	0
143	C19E4	Demolish existing drilled shafts	0	0	36,886	40,288
148	C19E7	Install new bolsters for temporary ramp	62,013	65,896	0	0
224	C19E7	Temporary ramp LCN - typical bearing assembly	0	0	112,000	127,344
272	C19E1	Reroute SPTC Tunnel Conduit for fire	20,000	48,615	60,902	62,501
462	C19E1	Relocate conduit installed by C19E1 in Ramp L-CS to eliminate interference with jet fans	24,064	25,571	24,064	25,571
571.01	C19E1	BENT F3 REDESIGN @ NORTH STATION (FCN #3 & #15)	0	0	159,838	178,509
571.04	C19E1	16" WATER LINE MARTHA ROAD (FCN NO. 54)	184,520	209,799	0	0
571.11	C19E1	SLURRY WALL LOST PRODUCTIVITY	0	0	2,098,292	2,385,758
571.12	C19E1	CN-S OPEN CUT CONSTRUCTION BULKHEAD	0	0	340,824	193,760
574	C19E1	Jet Grout Soil Stabilization (North Station SPTC Walls)	0	0	504,178	538,748
* 711	C17AA	Revise fireproofing ceiling pullboxes - C19E1 LCS & S-N	0	0	0	47,565
* 718.6	PW	Trench Drains	0	65,475	0	0
* 722	C19E6	Pot bearing design revisions for Ramp LC-N	0	198,975	0	0
* 723	C19E6	Demolition/restoration of SN boat wall to accommodate LC-N	0	46,482	0	0
* 727	C19E1	Raise CN-S tunnel conduit for 15' FP clearance	0	0	0	117,889
* 728	C19E4	Glass Block Revisions (Global settlement, specifically CP 024)	0	44,794	0	0
* 737	C19E6	Install ductbank waterproofing requirements at S-N ramp (FCN 20)	0	32,193	0	0
* F191	C19E6	Un-approved Mods		571,429		0
* F192	C19E6	Estimated Claim		501,147		0
D019E YHB/URS/TAMS (JV) TOTAL			\$333,053	\$1,855,491	\$3,336,984	\$3,717,933
D020B J.E. Sverdrup Civil, Inc.						
* 331	C20B1	Buy America Provision	0	0	0	189,000
* 760	C20B2	Investigate water infiltration at I-90 and I-93	0	0	0	1,060,194
* F201	C20B2	15kv Cable Rework @ AIS Vault		0		341,100

* post 2004 demand, no executed demand letter

**SDCs and B/PB Demand and Revised Demand
Central Artery / Tunnel Project**

CR#	Contract	Description	SDC		B/PB	
			Original Demand	Revised Demand	Original Demand	Revised Demand
<u>D020B J.E. Sverdrup Civil, Inc.</u>						
* F202	C20B2	Un-approved Mods		0		350,766
D020B J.E. Sverdrup Civil, Inc. TOTAL			\$0	\$0	\$0	\$1,941,060

D022A Deleuw, Cather & Co.

* 190	C22A2	FDS Monitor module relocation in TWO (FCN 168)		0		11,350
* 539	C22A9	2-Way Radio		1,861,400		0
* 739	C22A2	2-Way Radio O&M manuals		78,901		0
* 766	C22A1	Access restraints and milestone date revisions	0	587,976	0	641,218
* 767	C22A1	Vehicle loop detectors	0	0	0	184,386
* 768	C22A1	Additional IPCS work on South Boston Haul Road	0	0	0	350,000
* 769	C22A1	Install AM radio radiator wire portal to portal in both inverts	0	0	0	305,946
* 770	C22A1	Incorporation of comments and deficiencies for PS&E	0	54,350	0	0
* 780	C22A1	Specification and drawing changes	0	67,695	0	27,601
* 781	C22A1	Warehousing	0	32,120	0	48,323
* 785	C22A2	Equipment cabinet support frames (FCNs 37, 38, 39, 40, and 42)		0		72,899
* 786	C22A2	Simulcast installation		0		56,750
* 787	C22A2	Correct two-way radio distortion		0		56,750
* 789	C22A2	Loop detector replacement - Section II Mod not yet finalized		0		45,400
* 806	C22A1	Final Settlement I-90/TWT Furnish/Install IPCS	0	465,821	0	0
* 820.d	PW	Potential Elements of Project Wide Delay Recovery		3,251,167		3,251,167
* F221	C22A2	Futue cost I-90/I-93 radio system		1,816,000		0
D022A Deleuw, Cather & Co. TOTAL			\$0	\$8,215,430	\$0	\$5,051,790

D029A

* 763	C29A1	Platform Redesign BR #4		56,750		0
D029A TOTAL				\$56,750		\$0

Project B/PB - Project Wide

* 627.1	PW	Waterproofing - Leaks due to Design Errors on C19E1 and C11A1	0	0	0	150,000
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**SDCs and B/PB Demand and Revised Demand
Central Artery / Tunnel Project**

CR#	Contract	Description	SDC		B/PB	
			Original Demand	Revised Demand	Original Demand	Revised Demand
Project B/PB - Project Wide						
* 627.3	PW	Waterproofing - Materials	0	0	0	453,827
* 627.4	PW	Waterproofing - Corrosion	0	0	0	1,294,829
* 628	PW	Pavement	0	0	0	10,465,323
* 718.7	PW	Trench Drains	0	0	0	962,099
* 820.a	PW	Potential Project Wide Acceleration Recovery	0	0	0	2,730,411
Project B/PB - Project Wide TOTAL			\$0	\$0	\$0	\$16,056,489
Grand Totals			\$13,363,983	\$40,842,980	\$35,039,267	\$66,995,634

EXHIBIT E

GOVERNMENT LAWSUITS

- *Commonwealth of Massachusetts and the Massachusetts Turnpike Authority v. HDR Engineering, Inc.*, Suffolk Superior Court Civil Action No. SUCV 2004-02927-BLS;
- *Commonwealth of Massachusetts and the Massachusetts Turnpike Authority v. Gannett Fleming, Inc., URS Consultants, Inc., and TAMS Consultants, Inc., both individually and as a joint venture*, Suffolk Superior Court Civil Action No. SUCV 2004-04355-BLS;
- *Commonwealth of Massachusetts and the Massachusetts Turnpike Authority v. Fay Spofford & Thorndike, Inc., T.Y. Lin, International, J.V., individually and as a joint venture*, Suffolk Superior Court Civil Action No. SUCV 2004-01452-BLS;
- *Commonwealth of Massachusetts and the Massachusetts Turnpike Authority v. Fay, Spofford & Thorndike, Inc. and Rizzo Associates, Inc., Joint Venture*, Suffolk Superior Court Civil Action No. SUCV 2004-03843-BLS;
- *Commonwealth of Massachusetts and the Massachusetts Turnpike Authority v. MaGuire Group, Inc. and DMJM+Harris, Inc. f/k/a Frederic R. Harris, Inc., Joint Venture*, Suffolk Superior Court Civil Action No. SUCV 2004-03100-BLS;
- *Commonwealth of Massachusetts and the Massachusetts Turnpike Authority v. Gannett Fleming, Inc.*, Suffolk Superior Court Civil Action No. SUCV 2004-03844-BLS;
- *Commonwealth of Massachusetts and the Massachusetts Turnpike Authority v. Seelye, Stevenson, Value & Knecht, Inc.; and Parsons Transportation Group f/k/a DeLeuw, Cather & Company, both individually and as a Joint Venture*, Suffolk Superior Court Civil Action No. SUCV 2004-02427;
- *Commonwealth of Massachusetts and the Massachusetts Turnpike Authority v. Greenman-Pedersen, Inc., Vollmer Associates, LLP, Ammann & Whitney, both individually and as a joint venture*, Suffolk Superior Court Civil Action No. SUCV 2004-00444-BLS;
- *Commonwealth of Massachusetts and the Massachusetts Turnpike Authority v. HNTB Corporation*, Suffolk Superior Court Civil Action No. SUCV 2004-03435-BLS;
- *Commonwealth of Massachusetts and the Massachusetts Turnpike Authority v. Vanasse Hangen Brustlin, Inc., URS Consultants, Inc., and TAMS Consultants, Inc., both individually and as a joint venture*, Suffolk Superior Court Civil Action No. SUCV 2004-02428; and
- *Commonwealth of Massachusetts and the Massachusetts Turnpike Authority v. Bechtel Corporation, Parsons, Brinckerhoff, Quade & Douglas, Inc. and Bechtel/Parsons, Brinckerhoff, a joint venture of Bechtel Corporation, and Parsons, Brinckerhoff, Quade & Douglas, Inc.*, Suffolk Superior Court Civil Action No. SUCV2004-01151-BLS

EXHIBIT F

SUPPLEMENTAL ISSUES IDENTIFIED IN THE FOLLOWING
LISTED DOCUMENTS

1. Contract C11A1 Description of Contractor Claims
2. Inspector General Report: A Recommendation for Cost Recovery Against the Big Dig's Management Consultant: Grout Heave-Related Contractor Claims on the C11A1 Contract, February 2003
3. September 1, 2005 Joint Defense Agreement Regarding C11A1
4. July 12, 2002 Tolling Agreement Regarding C19D1
5. September 6, 2002 Tolling Agreement Regarding C19D1
6. Contract No. C22A1, Perini Corporation/Powell Industries, Inc. (JV) (Description of the parties' negotiations and ultimate settlement)
7. Contract No. C22A2, Honeywell Transportation Systems, Inc. (Description of the parties' negotiations and ultimate settlement) (current version as of January, 2008)
8. Independent State Auditor's Report on Certain Activities of the Massachusetts Turnpike Authority's Central Artery/Third Harbor Tunnel Contract C22A1 – January 1994 through December 2004 (No. 2003-0510-3C3)
9. May 28, 2002 letter from Kurt L. Dettman to David J. Hatem concerning C22A1 and C22A2
10. June 7, 2002 Tolling Agreement with B/PB Regarding C22A1 and C22A2
11. August 13, 2002 Amended and Restated Tolling, Joint Defense and Reservation of Rights Agreement Regarding C22A1 and C22A2
12. October 5, 2005 B/PB Presentation to the Attorney General: Waterproofing and Tunnel Leaks
13. July 26, 2005 Deloitte FAS, LLP Report – Assessment of Water Intrusion Related Costs in Interstate-93 Mainline Tunnel Contracts
14. December 20-22, 2004 Boston Central Artery/Tunnel Independent FHWA Leak Assessment
15. March 23, 2005 FHWA Tunnel Leak Assessment Boston Central Artery *Interim* Report
16. January 17, 2006 B/PB Presentation to Attorney General: Waterproofing and Tunnel Leaks Part II
17. June 16, 2004, Mediation Statement of Modern Continental Construction Co., Inc. as to the Design Defects Which Have led to the Persistent Leaks in the I-93 Main Line Tunnels (with Exhibits 1-22)

18. November 3, 2004 Mueser Rutledge Consulting Engineers Review of B/PB's Draft Report on the C17A1 Slurry Wall Leak
19. February, 2004 Ben C. Gerwick, Inc., Central Artery/Tunnel Project Draft Investigation Report on the Leakages in the Tunnel Under C17A2 and C17A9
20. May, 2004 Ben C. Gerwick, Inc., Central Artery/Tunnel Project Investigation Report on the Leakages in the Tunnel Under C17A2 and C17A9
21. June, 2004 Ben C. Gerwick, Inc., Central Artery/Tunnel Project Investigation Report on the Leakages in the Tunnel Under C17A6
22. Modern Continental Tunnel Leaks Presentation by Simpson, Gumpertz and Heger, Inc.
23. Inspector General Report: A Big Dig Cost Recovery Referral: Waterproofing Mismanagement by Bechtel/Parsons Brinckerhoff in East Boston, March 2005
24. PowerPoint Presentation of FHWA/MHD Briefing on the CA/T 1-93 Tunnel Leaks Conducted 3/___/05
25. 04/04/05 U.S. DOT, FHWA Immediate Release Article, Federal Highway Administration Statement on Central Artery/Tunnel Leak Assessment Report
26. US DOT- Statement of The Honorable Kenneth M. Mead, Inspector General of US DOT, (for Release on 04/22/05) Before the Committee on Government Reform, U.S. House of Representatives, Impact of Water Leaks on the CA/T Project and Remaining Risks
27. Issues from Wiss, Janney, Elstner Associates, Inc.'s Metropolitan Highway System Stern to Stern Safety Review – Phase I, dated November 15, 2006 (see attached list, Exhibit F, Item 27); Phase IA, Investigation of the Zakim Bridge Stay Cable Anchorages Final Report dated August 13, 2007; and Phase II, Central Artery Tunnel Water Infiltration Background Report, Final Report dated December 14, 2007

Exhibit F: Item 27

EXHIBIT __ WISS JANNEY STEM TO STERN AUDIT
PHASE 1 and 1(a)

Reportable Condition Description
General Reportable Conditions - throughout CA/T and boat sections
TS2: Overhead concrete delaminations and debonded patches on concrete roof slabs. This condition occurs primarily at construction joints. See Appendix A plan views for locations.
TS3: Leakage and deterioration at construction joints. This condition is related to TS2; however, it represents locations where the condition has not yet progressed to a delamination and possible overhead hazard. See Appendix A plan views for locations.
TS4: Debris in upper plenums. General observation in the CA/T system.
TS5: Pattern cracking and delaminations in roadway topping slab at various locations throughout the tunnel and boat structures.
TS6: Standing water and active leaks through wall/base slab construction joints or air vents in the lower plenum. See Appendix A plan views for locations with significant standing water.
TS7: Delaminations on cast-in-place concrete wall surfaces in boat sections, thin debonded patches. See Appendix A plan views for locations.
Cut and Cover Tunnels - no slurry wall, no side ducts (portions of I-90 Connector east of Fort Point Channel, Bird Island Flats, Logan Interchange, I-93/I-90 Interchange, some I-93 Ramps)
TS9: Active water leakage and ponding water in Ted Williams Tunnel utility rooms.
TS10: Significant cracking and delamination in tunnel structural elements at one location that traverses Ramp HOV-EB (at its Station 44+60) and Ramp L (at its Station 96+00) at Superplug location.
TS11: Cracking in tunnel walls and curb/barriers due to misaligned expansion joints in roadway slab and tunnel roof in Ramp D, I-90 EB and I-90 WB at Station 43+90 at Superplug location.
Cut and Cover - no slurry walls, with side ducts not including jacked tunnel or ITT (portions of I-90 Connector west of Fort Point Channel)
TS17: Cracked manhole cover on Ramp DN at Station 19+50.
Cut and Cover - steel soldier pile supported slurry walls (I-93 Mainline and most I-93 ramps except Dewey Square tunnel section)
TS19: Water breach at Panel E045 in I-93 (I-93 NB, Station 104+50). Unsuitable materials found at approximately 188 locations associated with bentonite seams in the concrete lagging per CA/T personnel surveys.
TS20: Leaks through SPTC walls, especially at roof to wall junction. Associated corrosion of roof girders. Orange colored stains may actually be algae.
TS22: Steel soldier pile flanges exposed at areas of missing fireproofing.
Jacked Tunnels with side ducts (I-90 Connector under South Station tracks Station 22+00 to 25+10)
TS24: 5 ft. wide section between construction joints with active leakage and unsound concrete or patches at Stations 23+10 and 24+00 in I-90 EB; similar conditions at Stations 24+50 and 25+20 in I-90 WB and at Station 26+40 in Ramp D. Also, a 6 ft. by 1.5 ft. area of unsound concrete at the slab soffit elevation change in tunnel roof at Station 21+60 in I-90 EB consists of weak grout and a skim coat patch.
ITT - Steel with Concrete Liner (I-90 Ted Williams under Inner Harbor)
TS27: Large sections of overhead concrete delaminations/overpour at Stations 102+43 and 105+71.
Cut and Cover - concrete-encased steel bent (Dewey Square Tunnel, I-93 SB)
TS29: Steel girder bottom flanges exposed at areas of missing fireproofing.
TS30: Impact damage at bottom flange of steel girder at I-93 SB Station 84+60.
TS31: Efflorescence and water staining on soffit sub-ceiling.
Reportable Condition Description
Suspended Ceilings in I-90 Connector Tunnels
TF1: Excessive hanger spacing or cantilever span, noted at 176 locations.
TF2: Uneven load distribution - excessively tight or loose hangers, noted at 81 locations including shored ceiling at I-90 EB Sta. 46+95 to 38-07. Loose hangers west of Sta. 44+25 attributed to shoring and not specifically noted.

EXHIBIT — WISS JANNEY STEM TO STERN AUDIT
PHASE 1 and 1(a)

TF3: Unsound epoxy anchors, noted at 36 locations.
TF4: Concrete spalling around channel inserts, noted at 15 locations.
TF5: Channel insert set too high in concrete, channel lips deformed due to overtightened bolts or lack of contact with bracket plates, observed at 7 locations.
TF6: Hairline crack in ceiling panel at I-90 EB Sta. 50+75; spalled corner at vent port in ceiling panel in Ramp D, Sta. 55+25.
TF7: Surface corrosion on connection bolts, noted at 9 specific locations and as general observation in 11 areas.
Suspended Ceilings in Ted Williams Tunnel
TF8: Spalled concrete around epoxy anchors, noted at 29 locations.
TF9: Crack in concrete through epoxy anchor embedment zone, noted at 68 locations.
TF10: Epoxy anchors in unsound concrete, TWT EB Sta. 112+05 and Sta. 131+60.
TF11: Loose nuts or partial thread engagement on anchor bolts, noted at 9 locations.
TF12: Gap between yoke and concrete, noted at 49 locations.
TF13: Dry-packed grout spalled or missing, noted at 18 specific locations as general observation in two areas.
TF14: Offset between stringers at expansion joint, missing splice and long cantilever, TWT EB Sta. 84+88, 96+17, 143+15, TWT WB Sta. 147+80.
TF15: Excessive bolt tightness at stringer expansion joint connections, noted at 9 locations where torque was checked.
TF16: Movement at direct attached ceiling panel, TWT EB Sta. 95+00.
Suspended Ceilings in Central Artery (I-93) Tunnels
TF17: Loose vertical hanger, noted at 35 locations.
TF18: Missing diagonal braces, missing clevis pins at diagonal brace connections, CANB Sta. 154+30 to 154+50 CANB Sta. 156+20 to 162+00 CASB Sta. 147+00.
TF19: Loose or missing cotter pins or lock nuts, noted at 44 locations.
TF20: Hairline cracks in precast concrete ceiling panels, CANB Sta. 86+05 to 86+40.
Suspended & Wall-Mounted Equipment and Fixtures - I-90 Connector, Ted Williams Tunnel, Central Artery
TF21: Pullout of epoxy anchors for light fixtures direct connected to concrete roof slab. Fixture at Ramp L-CS Sta. 81+00 moved under hand pressure; anchors at Ramp L, Sta. 76+75 pulled out up to 1/2 in.; 2 missing anchors at Ramp L Sta. 76+25.
TF22: Jet fan support deficiencies, noted at 7 locations: Loose or missing bolts, partial thread engagement, improperly lapped bearing connections. Poor alignment at several other locations.
TF23: Loose and/or missing connection elements at wall or ceiling mounted cameras and equipment, noted at 21 locations.
TF24: Missing fasteners at electrical box covers over traffic, noted at 12 locations.
TF25: Missing or damaged base connection at walkway railing, noted at Ramp ST-CN Sta. 51+90 and Ramp D Sta. 51+00.
TF26: Impact damage to walkway railing, noted at I-90 EB Sta. 18+30, Ramp D Sta. 54+10, Ramp ST-CN Sta. 51+00.
TF27: Damaged exit signs at emergency exit doorways, noted at 9 locations.
Tunnel Signs and Supports - I-90 Connector, Ted Williams Tunnel, Central Artery
TF28: Impact-damaged sign with bent framing and/or missing bolts, noted at 13 locations.
TF29: Loose or missing fasteners at sign support to roof connection, noted at 12 locations.
TF30: Corrosion on sign support elements, noted at 55 locations in TWT.
TF31: Loose U-bolt connections at sign supports, noted at 13 locations.
TF33: Atypical sign anchored to roof with epoxy anchors, noted at I-90 EB Sta. 26+25 and 39+68; Ramp L Sta. 78+50.
Wall Panels and Finishes - I-90 Connector, Ted Williams Tunnel, Central Artery
TF34: Lower panel connections missing or anchored into unsound concrete, noted at 5 locations in I-90 EB and Ramp L side plenums.
TF35: Standing water on walkway surrounding base of panel, noted at CANB Sta. 111+80.

**EXHIBIT WISS JANNEY STEM TO STERN AUDIT
PHASE 1 and 1(a)**

TF36: Corrosion of lateral panel support connection elements, noted as a general observation in 23 areas in side plenums.
TF37: Water staining, cracking, and delamination of direct applied tiles due to cracking or movement of concrete substrate, noted at 63 locations throughout I-90 Connector and TWT.
Viaduct Superstructure Elements
CV1: Mortar patches were observed on the underside of the viaduct structures in the I-90/I-93 Interchange and at I-93 North of the Charles River. Typically the patches were on the side and bottom of precast boxes, immediately adjacent to the epoxied joints and usually in the 1-2 sq. ft. size. Potential overhead hazard.
CV2: Mortar patches on the underside of the box girder top flange/slab (wing) of the viaduct structures in the I-90/I-93 Interchange and at I-93 North of the Charles River. Typically, these patches were much larger than patches at epoxied joints. Certain locations were estimated to be approximately 3 in. deep. Potential overhead hazard.
CV3: Large spall observed at the underside the box girder wing (I-93NB) near Bent NB8. Located at interface of wing tip and barrier wall.
CV4: Large spall and delamination noted at epoxied joint of Ramp CT near abutment at end of ramp.
CV6: Leaking on interior of box girder segment observed around joint of various closure pours
CV7: Cracking and moisture staining noted at a sign support haunch near Bent CT11.
CV11: Poorly installed electrical junction box cover in span SN17.
CV15: Water leaking from joints between box sections was noted near the northeast corner of the Summer St. Bridge over C St.
CV16: Core holes in box girder webs had not been patched.
Viaduct Substructure Elements
CV19: Excessive bearing deformation observed at some locations. The edge of an elastomeric bearing at Bent NS14 is beginning to separate from the concrete void slab drop panel.
CV22: Anchors in precast curtain wall panels are loosening due to traffic vibrations.
CV23: Above-grade EPS (expanded polystyrene) "embankments," located primarily in the I90/93 interchange area, are clad with thin stucco material that can be easily damaged by minor impacts (e.g. from landscaping and maintenance equipment, or vandals).
Viaduct Superstructures-Box Girder Elements
SV1: Loose nut, various locations, see Appendix B.
SV2: Missing nut, various locations, see Appendix B.
SV3: Missing bolt, various locations, see Appendix B.
SV4: Saw cut notch in top flange due to stay-in-place form modification, various locations, see Appendix B.
SV5: Unpainted backer bar still in place. East end of North Cross Girder. I-93 Northbound on elevated steel structure (C19B1).
SV6: Spall in underside of deck concrete. Ramps North of Gilmore Bridge. East girder within Span CL8-CL9 (C19B8).
SV7: Spall in underside of deck concrete. Ramps North of Gilmore Bridge. West girder within Span CL8-CL9 (C19B8).
SV8: Epoxy injected cracks - Ramp K between box girders and Pier 16 and 17 (C12A3).
SV9: Missing access hole hinge bolt - Ramp L-CN, Girder 2, south of Cross Girder 2 (C19E6).
SV10: Flame cut conduit web penetration - Ramps North of Gilmore Bridge. Girder SN2 near Pier SN-2 (C19B8).
SV11: Flame cut conduit web penetration. Ramp SN, outside girder, near Pier SN5 (C19E6).
SV12: 5/8" long crack through weld throat at top of diaphragm attachment to girder web. Ramp LC-N, outside girder near Cross Girder LCN3 (C19E6).
SV13: Cracked weld at top of web stiffener. Ramp LC-N within Cross Girder LCN3 (C19E6).
SV14: Corrosion and leakage on stay in place forms, various locations, see Appendix B.
Viaduct Substructure Elements
SV18: Elastomeric bearing pads distorted on south end of bus ramps (C09F1).
Viaduct Superstructures - Plate Girder Elements

EXHIBIT WISS JANNEY STEM TO STERN AUDIT PHASE 1 and 1(a)

SV19: Four "C" clamps over roadway connect conduit to bottom flange near middle pier of Albany Street overpass (C09C2).
SV20: Plywood form left in place at north abutment of Albany Street overpass (C09C2).
SV21: Failed expansion joint insert (typical) (C08A1).
General Conditions
ZB1: Main span and back spans have open electrical junction boxes and conduits. Some conduits are filled with water.
ZB3: Main span and back spans have few working lights.
ZB5: Back span cracking in the transverse diaphragm walls, longitudinal diaphragm walls, and the trapezoidal box girder top and bottom flange soffits.
Tower Elements
ZB6: Cracking, delamination, and deterioration of previous concrete patches.
ZB12: Honeycombing of concrete adjacent to top stay anchors.
ZB13: Loose anchor bolt and bent anchor bolt in south tower anchor box.
ZB14: Flooding and/or excessive standing water at grade adjacent to the south tower foundation.
Main Span Elements
ZB15: Missing nut at cantilever floor beam (CF8S) top connection to longitudinal box edge girder (EG3S).
ZB16: Missing bolt and loose bolt at a floor beam supporting the grating on the east side of FB15S (north elevation).
ZB17: Leaking drain on the east side of FB1N (north elevation).
ZB18: Loose closure panel on the east side of FB1N (south elevation).
ZB19: Cracking, delamination, and deterioration of precast panels.
South Back Span Elements
ZB20: High concentration of hairline cracks at the soffit near Bent 1 and Bent 2.
ZB21: Electrical tape on external tendon splices.
ZB23: Missing precast panel connections and bolts in the closure area adjacent to Bent 1.
Stay Cable Elements
ZB24: Missing or improperly installed bolts at hood on bottom stay anchor connection. Back span anchors C10S, C15ES, C2N, and 32EN.
ZB26: Wax leakage from seal at end cap. Bottom stay anchors C26ES, C28ES, C17WS, C13ES, C22EN, C21EN, and C17WN.
ZB27: Failed sealant at transition from anti-vandalism tube to HDPE pipe at numerous bottom stay anchors.
ZB28: Tie wire used in place of cotter pin at south back span cable tie adjacent to bottom stay anchor C10S.
ZB30: Longitudinal cracking in the top flange of the concrete trapezoidal box girder adjacent to numerous back span anchors.
ZB31: Missing and/or damaged wax injection and vent ports. Bottom stay anchors C6S and C13WS. Top stay anchor C6N.
ZB32: Damaged end caps. Bottom stay anchors C6S and C13WN.
Bents
ZB34: Cracking and localized spalling of concrete at Bent 6.
Bridge Superstructure Elements
LB1: Backing bar used for fabrication remains at bottom flange attachment of floor beam to floor beam segment adjacent box girder web plate. Typical at all floor beams.
LB2: Missing bolts at floor beam connection at Floor Beam 8.
LB3: Debris and dirt accumulation inside box girder.
LB4: Light fixtures, rigid conduits, and wiring installed but not operational.
Large Building Elements
B3: Exterior Walls: Missing anchor at louver-support column in the northeast supply fan room on Level 3 of VBI.
Medium-Sized Building Elements
B4: Exterior Walls: Loose bolt at spandrel beam near the east end of the south elevation (Central Maintenance).

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Small Structure Elements
B6: Concrete Deterioration: Ceiling delamination (TE-12-W).
All Buildings and Structures - Non-Structural Conditions
B8: HVAC, Plumbing, Electrical, Ceiling Supports: Lack of lateral bracing at hanger supports; lack of equipment anchors.
B9: Water Leakage: Leakage through cracks and joints in walls, ceilings, and slabs; stains, mineral deposits, and peeling paint on ceilings and walls; standing water; rusted electrical conduits and boxes; plumbing leaks; some injection work; efflorescence on brick walls.
B10: Concrete Deterioration: Slab scaling and delamination (VB4); delaminated patches (VB1); window sill delamination (OCC); wall delaminations (Summer, Essex St. fan chambers); and crumbling concrete (TE-606, TE-617).
B11: Concrete Surface Blemishes: Ceiling cracks with mineral deposits under interior spaces; exterior wall cracks, some with mineral deposits or stains; cracks in slabs; splotchy surface appearance; patches; exposed reinforcing steel and soldier piles.
B12: Steel Deterioration: Minor corrosion of base plate (ERS 4/ESS); peeling paint and corrosion on window trim (Parcel 7 Garage) and roof trim (Central Maintenance); corrosion on stair risers, treads, and supporting members (small structures); corrosion of embedded steel plates (tunnel egress stairs).
B13: Masonry and Stone Deterioration and Distress: Cracked and spalled bricks (ERS 7/ESS); vertical cracks in brick masonry walls near corners, loose joint mortar (Essex St. fan chamber); open coping joints (Summer, Beach St. fan chambers); cracked stone cladding, open joints (Summer, Essex St. fan chambers); CMU blocks removed from interior walls (VB4, TE-526); and loose CMU wall connection plates that are not tight (TE-405).
B14: Local Hazard: Trip (VB8, Parcel 7 Garage, I-90 Toll Plaza Tunnel), drive (Parcel 7 Garage), and overhead (VB4, TE-505) hazards.
B15: Maintenance: Worn traffic coating (Parcel 7 Garage); broken glass pane and open interior joints at window frames (Air Intake); clogged roof drain and wire sticking out of brick wall (VB5); damaged roof flashing (VB7); duct tape on stair treads (TE-12-W, TE-13-E); and door that does not latch (TE-12-W).
General Conditions (See Appendix B for exact locations)
SL1: Structure base connection contains loose or untightened leveling nut(s) / anchor nut(s) resulting in gap between base plate and nut(s). Various locations. (See Appendix B).
SL2: Base connection is loose and exhibits displacement when subjected to lateral loads. Base connection obscured by architectural decoration. Various locations. (See Appendix B).
SL3: Impact damage on sign. Various locations (See Appendix B).
Sign Support Structures
SL4: "HOV" sign on west leg missing bottom bolt at truss sign N-03 south of Mass Ave overpass.
SL5: Monotube overhead sign structure with missing anchor bolt nut on west leg. I-93 NB (South of city) near mile marker XX/0.4.
SL6: Single post sign has anchor nuts with only half of thread depth engaged. North side of intersection of Mass. Ave. and Frontage Rd.
SL7: Monotube overhead sign structure with missing bolts and one loose bolt in midspan splice of large tube. I-90 EB east of Albany Street Bridge.
SL8: Mile marker sign 19 missing nut. Other anchor nuts are loose. I-93 Northbound on Zakim Bridge.
SL9: Mile marker sign 18.9 with fractured pole to base plate weld due to impact damage. I-93 northbound on Zakim Bridge.
SL10: Rectangular tube overhead sign structure with missing nut on east base plate. Near tunnel entrance north of Summer Street.
SL11: Single post sign has failed anchor bolt and loose anchor nuts. Ramp SN at mile marker 0.9.
SL12: Single post sign has impact damage at base connection. Fractured weld. Ramp NS at mile marker 0.6.
SL13: Roadway sign connection with loose clips fastening it to the steel posts. Service Road and Porter at airport.

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SL14: Monotube overhead sign with loose clip anchors resting within sign flutes. I-90 just east of D Street.
Luminaire Support Structures
SL15: Square aluminum light pole with impact damage. Mass. Ave. connector eastbound side near beginning of ramp to 93-SB.
SL16: Square aluminum light pole with impact damage. Intersection of South Boston Bypass Rd. and Boston Wharf.
SL17: Square aluminum light pole with foundation damage. Foundation displacement occurs with minimal horizontal force applied to pole. Intersection of South Boston Bypass Rd. just north of Boston Wharf on south side of road.
SL18: Prestressed concrete light pole with major impact damage at base. Summer St. just east of D St. on median.
SL19: Prestressed concrete light pole with cracked base. Summer St. just east of D St. on median.
SL20: Prestressed concrete light pole with cracked grout covering over base connection. Summer St. just west of Drydock St. on south side of road.
SL21: Light pole with unstable foundation. In public park area on D street and electric bus ramp.
SL22: Light post with loose globe fixture. Intersection of Congress and Boston Wharf Road.
SL23: Precast concrete light pole with several vertical cracks. Intersection of Martha and Storow Dr.
SL24: Precast concrete light pole not installed plumb. Storow Drive center median near tunnel entrance.
SL25: Precast concrete light pole not installed plumb. Storow Drive center median near tunnel entrance.
SL26: Precast concrete light pole with spall at base. Storow Drive center median near tunnel entrance.
SL27: Light post with loose globe fixture. Intersection of Martha and Whittier Place.
SL28: Light pole with decorative base cover damage. Intersection of Kingston and Surface
SL29: Concrete light pole with vertical crack. Intersection of Essex and Surface
SL30: Precast concrete light pole with short crack at base. Frontage Road across from South Bay Mall and Bank of America.
SL31: Precast concrete light pole with short crack at base. West end of shopping center, east of Railroad bridge.
SL32: Light pole and concrete support with impact damage. Between I-93 SB and frontage road on central barrier.
SL33: Light pole with flame cut hole for anchor bolts on barrier between I-93 S.B. and frontage road on central barrier.
SL34: Light fixture is full of water. North end of north toll booth at airport.
SL35: Five cast iron posts with loose base connection about 2 ft above base. Some of these connections were previously welded and the short length welds cracked. Summer just east of Dorchester.
SL36: Light pole with broken breakaway connector. Harborside and Porter at airport.
SL37: Light pole with significant corrosion with major section loss at pole base. Harborside south of Jefferies at airport.
SL38: All light poles on Spectacle island do not contain anchor bolts.
SL39: Light poles on Spectacle Island were reported to have problems of disengaging globe fixtures.
Traffic Signal Support Structures
SL40: 2 Cracked cast aluminum traffic post bases. East side of intersection of Mass. Ave. and Frontage Rd.
SL41: Traffic signal post with impact damage. D Street just north of Summer St. in median.
SL42: Traffic signal with missing nut and a partially engaged nut. D Street just north of Summer St. on east side of St.
SL43: Traffic signal to mast arm connection with misaligned light fixture. Intersection of Pearl and Surface.
SL44: Traffic signal base connection with missing nut. Northwest corner of Broad and Surface.
SL45: Traffic signal post with nuts not fully engaged at base plate at northeast corner of Sudbury and Surface.
SL46: Rectangular steel tube overhead traffic signal with missing anchor bolt at base connection. Ramp SA-ST.
SL47: Traffic signal post with base problem. Intersection of Traverse and Washington in median.
SL48: Questionable base connection - traffic signal post. Intersection of Causeway and Washington.
SL49: Impact damage on traffic signal post base. Intersection of Cross and Sudbury.
SL50: Traffic signal with missing anchor bolt and nut. Intersection of Nashua and Minot.
SL51: Traffic signal with impact damage on main pole structure. Ramp CL near mile marker 0.2.

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SL52: Traffic signal with 4 in long base crack that fractured during basic lateral load test. South Bay Shopping center entrance.
SL53: Cantilevered traffic signal mast arm connection that exhibits corrosion and crack-like condition at connection to pole. Various locations. (See Appendix B).
SL54: Cantilevered traffic signal mast arm with broken U-bolt connection on center light. Intersection of Pumphouse and Summer.
SL55: Cantilevered traffic signal mast arm with 2 loose connection bolts on the lower side of the connection. Southwest corner of D Street and Congress.
SL56: Cantilevered traffic signal mast arm with loose connection bolt. Gap between connection plate and head of bolt. Southeast corner of Congress and East Service
FIRE DETECTION & ALARM SYSTEMS
LS4: Spacing of some manual fire alarm boxes are not be in compliance with basis of design and NFPA 502 (I-93, I-90 Connector).
LS5: Assumptions used in evaluation to remove linear heat detection systems are not presently valid based on key systems not being fully installed and available for OCC use.
LS6: Basis of design fire-detection time.
TRAFFIC CONTROL SYSTEMS
LS7: Emergency strobe light (ESL) system is poorly defined to motorists and may be ineffective in directing them to safe egress in the event of a tunnel evacuation.
LS8: Corrosion of the exposed conduit raceway and strobes in the Ted Williams Tunnel.
LS9: Emergency strobe light (ESL) circuits are not supervised for circuit failure.
LS10: Highway advisory radio (HAR) and variable message sign (VMS) systems are not fully integrated into IPCS nor reliable for OCC use.
STANDPIPE SYSTEM & WATER SUPPLIES
LS11: Section of standpipe system is disconnected from rest of system (I-90 EB near utility room UR -117).
LS12: Connection of two sections of standpipe piping is not secure (near access to VB5).
LS13: Inoperable hose cabinet handles prevent access to hose connections (I-93 NB/SB tunnels and ramps).
LS14: Oxidation on bronze hose valves in hose connection cabinets could inhibit operability (I-90 EB/WB in at least three whole standpipe sections).
LS15: Elbows for hose connections show signs of corrosion (TWT).
LS16: Corrosion of some sections of tunnel standpipe piping (TWT, I-93 NB, I-93 SB ramps).
LS17: Support for piping is damaged or does not comply with code (standpipe sec. 213 of I-93 NB Ramp ST-CN).
LS18: Incorrect or missing identification signage for drain valves and fire department hose connections (I-93, I-90, TWT).
LS19: Standpipe piping system not protected against potential vehicle impact (I-93 SB Ramp R-R, last hose connection and associated 4-inch piping at the south end of ramp).
LS20: Rusted chain wheels for sectional valves over tunnel walkways, control chains not locked against unauthorized closure, and lack of electronic monitoring of valves for closure.
LS21: Insulation becoming detached from wet pipe (TWT utility room UR45).
LS22: Standpipe sectional control valve above tunnel walkway has its control chain out of reach from walkway (standpipe sec. 408 between HC 4 and HC 5 in I-90 EB).
LS23: Standpipe sectional control valve chain is missing (near HC 3 on I-93 SB Ramp R-R).
LS24: Standpipe sectional valve is partially closed and chain operator is missing (Sec. 408, between HC 1 and HC 2 in I-90 EB tunnel).
LS25: Wet standpipe riser control valve for TWT is closed (VB6).
LS26: Valves at wet standpipe hose connections are closed (TWT).
LS27: Fireproofing material present on air vacuum/relief valve (I-93 SB Ramp R-R).
LS28: Valve hand wheel not attached to hose connection (I-90 WB Ramp D cabinet Section 416, HC 8).
LS29: Missing hose connection caps (I-93 NB/SB Fire Dept. Connections located at the surface of Tunnel Egress 526H).
PORTABLE FIRE EXTINGUISHERS

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LS30: Fire extinguishers exhibiting rust near bottom of extinguishers (I-90/I-93 Connector EB).
LS31: Maintenance of fire extinguishers per Code is not evident.
EMERGENCY RESPONSE PLANS & CONTROL OF HAZARDOUS MATERIALS
LS32: Inter-agency training on incident response procedures is not occurring as planned (all tunnels).
EMERGENCY EGRESS FEATURES
LS33: Emergency response procedures for tunnel egress are not consistent with the project Design Criteria or with NFPA 502.
LS34: Project design basis does not address accessible egress from the tunnels.
LS35: Obstruction present on TWT egress walkway (west end of tunnel).
LS36: Many of the sliding 1-1/2 hour fire doors do not close properly (all tunnels) and have door gaskets that are bent and/or partially torn (TWT only).
LS37: Broken exit signs at some cross passages/tunnel exits (all tunnels) and within vent bldgs (VB3,4,5,6,7,8).
LS38: Exit signage not visible (lower portion of TWT; large fan rooms of VB1,3,4,6).
LS39: Heavily soiled exit signs (all tunnels).
LS40: Non-working or insufficient lighting in tunnel exits/cross passages (I-90 and I-93 only).
LS41: Temporary laminated placards used for exit and wayfinding signage (TWT and I-90 only).
LS42: Stair interrupter gates are broken and left open at some locations (TWT and I-90 only).
LS43: Opening force for sliding fire doors exceed Project Design Criteria (all tunnels).
LS44: Guardrails not provided for passenger-side egress walkways in tunnels (all tunnels).
LS45: Some of the sliding doors for cross passageways do not have fire-rating label (all tunnels).
LS46: Fire-rated doors do not close properly (some mechanical and electrical rooms of VB1,2,3,4,5,6,7).
OPERATIONS & CONTROL SYSTEMS (OCC, BOCC, IPCS)
LS47: Total IPCS systems integration not complete (OCC).
LS48: Personal emergency response equipment for operators and critical information access.
LS49: Extent of training to handle OCC power failure. Response to OCC power failure was inefficient and took too long to get back in service.
LS50: Deteriorated condition of CCVE equipment (all tunnels).
LS51: Possible single point of failure - insufficient cooling for critical data and equipment storage rooms.
LS52: Unique/proprietary IPCS software system and hardware obsolescence.
LS53: At times OCC staffing does not appear to be adequate to monitor the number of cameras within the CA/T system.
POWER SYSTEMS (ELECTRICAL SYSTEMS & SUPPORT SPACES)
LS56: Water is leaking into the main electrical rooms and other critical areas (VB 2, 4, 7, 8; OCC, substations, various tunnel utility rooms).
LS58: Access within the fire pump room is restricted (VB5) and flammable fluids and other items are stored in fire pump room (VB7).
LS59: Grounding busses and some batteries are corroded and leaking acid (all vent bldgs).
LS60: Generally inadequate emergency signage, inadequate clearances, improper liquidtight conduit length and supports, exposed cable and missing miscellaneous accessories (all vent bldgs, OCC, and substations).
LS61: Multiple spaces have cooling capacity concerns (all vent bldgs and substations).
LS62: A space originally designed to be a clerical support storage room has been converted to a computer room (OCC).
LS63: Inoperative building supply and exhaust fans (all vent bldgs, OCC, and substations).
LS64: The supply fan for the electrical room is cycling on and off (VB5).
LS65: The supply fan and exhaust fan rooms have visible standing water (VB7).
LS66: The outdoor air dampers do not seal (VB6).
LS67: There is no make-up or supply air to the battery room that has a continuously operating exhaust fan for H2 ventilation (VB6).
LS70: Exhaust fans in Tunnel Jet Fan Control Room do not have vibration isolation (VB8).
LS71: Damper indicator lights are not functional (VB1,3,4,8).
LS72: Damper actuator hydraulic oil tanks show visible signs of leaking (all vent bldgs).

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LS73: Combustible debris and materials in the fan room (VB6).
LS74: Fire stop in the fan control room (B3M02) is not complete (VB5).
LS75: Construction filter remains installed on the supply grille of B106 (VB4).
LS76: Fan damper controls are in the direct path of the louvers and fan inlets (VB7).
LS78: Flexible connection exceeds allowable length and no supports or grounding jumper visible (VB 3,5).
LS79: Failure in controlled power outage, generator and UPS test (VB2).
CENTRAL ARTERY/TUNNEL
R2-1: Three wing patches on Ramp ST, contract C19B1, north of Charles River, recommend patches be replaced.
R2-2: Brownish wing patches on Ramps XX and XXE in South Bay Interchange that exhibited varying degrees of unbonded areas, recommend MTA or CA/T investigate these patches further (located over 4th, Broadway, and HOV-EB) and repair unsound patches.

SUPPLEMENTAL WISS JANNEY LIST OF ISSUES

TS1: Diagonal cracks are present near ends of spans and vertical cracks near midspan on the sloped faces of portal roofs. This condition occurs at various locations in the CAVT system. See Appendix A plan views for locations.
TS8: Multiple horizontal or diagonal cracks at localized areas of the boat or portal walls. See Appendix A plan views for locations.
TS12: Cracking and bowing in lower plenum cast-in-place wall at Station 144+00 in Ted Williams Tunnel.
TS13: Bowing of precast panel at underside of roadway slab in lower plenum, south duct of Ted Williams Tunnel between 136+80 and 137+30.
TS14: Exposed steel I-beams with corrosion and scaling at east bulkheads of Ramp T-A/D supply plenums.
TS15: Scaling concrete surface at the tunnel roof in Ted Williams Tunnel westbound between Stations 88+96 to 89+20.
TS16: Pattern cracking in roof bottom surfaces in the I-90 Connector tunnels sometimes associated with unconsolidated concrete. Also occurs at one location in the ITT-concrete tunnel section. See Appendix A plan views for locations.
TS18: Various conditions at slurry wall construction joints in Ramp L between Stations 65+00 and 72+50, including leakage, exfoliation of shotcrete repairs, and unsound concrete. Leakage at the joints has also caused corrosion of steel hardware supporting the precast concrete walls located along the roadway.
TS21: Theoretical deformation/yielding at roof girder web connections to soldier piles.
TS23: Leakage and rust stains at several PT girder ends.
TS25: Pattern cracking in roof bottom surfaces similar to TS16 conditions but occurring specifically in the jacked tube sections, which could not be waterproofed with conventional sheet waterproofing due to tunnel installation method. See Appendix A plan views for locations.
TS26: Delaminations and cracking at shear keys in Ted Williams Tunnel supply plenums.
TS28: Overstress calculated in roof girders at section over interior column.
TF32: Crack in concrete through anchor embedment zone at sign support anchorage, noted at TWT EB Sta. 143+18, TWT WB Sta. 101+20.
CV5: Insufficient grout in tendon ducts.
CV8: Atypical traffic barrier expansion joint. (Typically a cover plate detail at expansion joints.)
CV9: Diagonal cracking of webs of precast segmental box girders observed in Frontage Road North. Affected area includes longer-than-specified closure pour. Similar, less severe cracking was noted in a few other locations.

CV10: Deterioration of concrete overlay on viaduct decks.
CV12: Repaired cracking in the base of an expansion joint segment was observed at Pier SN10.
CV13: Several spans of continuous box girder construction without any apparent means of accommodating volume change effects were observed in various ramps in the I-90/I-93 interchange.
CV14: Deficiency report (DR) #177 of Contract C19B1 indicated transverse tendons were missing in a closure pour near Bent NB8.
CV17: Columns observed with potential interferences, with precast box girder segment wings, during a seismic event.
CV18: Map cracking of cast in place Bents.
CV20: Missing pintles noted at Bents NS11 and SN15.
CV21: Pintle at Ramp NS north abutment noted to be locked-up for any additional contraction movement.
CV24: Fire damage inside transition structure at the north abutment of I-93NB in the I-90/I-93 Interchange.
SV15: Diagonal cracks in double column pier (typical) (C13A1).
SV16: Diagonal hairline cracks in double column pier (typical) (C12A3).
SV17: Diagonal hairline cracks in single column pier (typical) (C12A3).
ZB1: Main span and back spans have open electrical junction boxes and conduits. Some conduits are filled with water.
ZB2: Grout voids in post tensioned tendon ducts at tower strut and strut cantilever, main span deck slab, and back span diaphragm walls and deck slab.
ZB4: Main span and back spans have cracking, delaminations, and deterioration of roadway wearing surface.
ZB7: Cracking between stay cable anchors on the north and south elevations of each tower.
ZB8: Longitudinal cracking in concrete at exterior faces of the north and south tower upper legs.
ZB9: Cracking in concrete at north tower strut.
ZB10: Cracking in concrete at north and south tower lower legs.
ZB11: Cracking in concrete at south tower stay cable anchor C19E.
ZB22: Cracking in wing wall of the south abutment expansion joint (southbound lanes, west side).
ZB25: Oil leakage from internal elastomeric damper observed at hood, connection, or anchor nut at numerous bottom stay anchors.

ZB29: Anchor plate deformation at bottom main span stay anchors C19ES, C20ES, C22ES, C18EN, C19EN, and C33EN.
ZB33: Bolts at bearings not properly installed.
LB5: Transverse and diagonal concrete cracking in north end pier cap beam.
LS1: Effect of hot gases from fire on epoxy anchors in exhaust plenum (TWT); Unprotected structural steel ceiling support elements located outside of exhaust plenum (I-90 Connector, I-93).
LS2: ASTM E119 fire curves for evaluating the response of tunnel elements subjected to fire may not be fully representative of a tunnel car fire.
LS3: Fire resistance ratings of the fireproofing assemblies, through-penetration assemblies, and opening protectives in tunnel exhaust plenums.
LS54: Non-diverse power for UPS systems (OCC, VB7).
LS55: Automatic capabilities for 15 kV automatic transfer switch disabled (all vent bldgs, OCC, and substations).
LS57: Conflicting drawings and installation of electrical equipment (all vent bldgs, OCC, and substations).
LS68: Settings of overcurrent protection devices inconsistent (all vent bldgs, substations, pumping stations, and OCC).
LS69: Emergency response procedures incomplete or unavailable (all vent bldgs, substations, pumping stations, and OCC).

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